Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.08.96 Test oil : ISO 4113

Combination No. : 0 402 646 742

Injection pump

Pump designation : PE6P12OA32OLS7837-2

EP type number : 0 412 626 943

Governor

Governer design. : RQ300/1100PA1272 Governer no. : 0 421 801 804

Cust. part No. : 0270743002

Customer—spec. information Customer : MB—NFZ Motor : OM441 LA Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 120 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

. 1

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.50

Start of delivery mark

Tolerance : +- 0.10 Check

tolerance °NW : +- 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 12.60

	+ Rated speed rpm : 431
Rack travel in mm : 12.60	+ guide sleeve
Tolerance mm : +- 0.05	† travel mm : 4.71
Tolerance mm : +- 0.05	+ Tolerance mm : +- 0.10
	+
Del. quantity	+ Rated speed rpm : 570
cm3/1000 strokes : 193.5	+ guide sleeve
	+ travel mm : 6.00
Tolerance	+ Tolerance mm : +- 0.10
cm3/1000 strokes : + 1.0	+
Observation and the second sec	+ Rated speed rpm : 1350
Check tolerance	+ guide sleeve
cm3/1000s. : +- 4.0	+ travel mm : 11.50
Chrond	† Tolerance mm : +- 0.50
Spreed	T
Tolerance cm3/1000 strokes : 6.0	GUIDE SLEEVE POSITION
CIIDY 1000 Strokes . 0.0	T GOIDE SEEEVE POSITION
Check tolerance	Rated speed rpm : 650
cm3/1000s. : 9.0	Nated speed 1 pm . 050
. 7.0	Rack travel in mm: 20.00
Rated speed rpm : 300	+ Tolerance mm : +- 0.80
nated opeca (pii)	10(0141)00 11111
Rack travel in mm : 5.60	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.10	+
Del. quantity	+ Rated speed rpm : 600
cm3/1000 strokes : 19.0	+ Aneroid pressure
Tolerance	+ hPa : 600
cm3/1000 strokes : +- 3.0	+ Del. quantity
Check tolerance	+ cm3/1000 strokes : 193.5
cm3/1000s. : +- 6.0	+ Tolerance
Spreed	+ cm3/1000 strokes : +- 1.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 6.0	+ cm3/1000s. : +- 4.0
Check tolerance	+ Spreed
cm3/1000s. : 10.0	+ Tolerance
	+ cm3/1000 strokes : 6.0 + Check tolerance
(B) SETTING OF INJECTION PUMP	+ cm3/1000s. : 9.0
WITH GOVERNOR	T (1115/10003. : 9.0
WITH GOVERNOR	I
GUIDE SLEEVE TRAVEL	+ CONTROL LEVER
	+
Rated speed rpm : 300	+ control lever
guide sleeve	+ position degree : 94.0
travel mm : 1.94	+ tolerance degree : +- 4.0
Tolerance mm : +- 0.20	+
	+ RATED SPEED
Rated speed rpm : 1153	†
guide sleeve	+ rack travel mm : 12.70
travel mm : 6.37	Rated speed rpm : 1140
Tolerance mm : +- 0.15	Tolerance 1/min : +- 8
Rated speed rpm : 1100	rack travel mm : 4.00
	Rated speed rpm : 1250
guide sleeve travel mm : 6.00	+ Tolerance 1/min : +- 15
Tolerance mm : + 0.10	T rocerance minima.
TOLET ATTUCE THAT	rack travel mm : 0.75
	T TOCK CLOVER (IN) . U.13

Tolerance mm		+
Rated speed rpm	: 1350	START CUT-OUT
	<del></del>	Rated speed rpm : > 100
LOW IDLE		Rated speed rpm : < 220
		Check
control lever	. 72.0	+ speed 1/min : > 80 + Check
position degree tolerance degree		speed 1/min : < 240
_	113	- Copeda Trimin
Testing:		+ FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 300	+ FUEL DELIVERY CHARACTERISTICS
rack travel mm		Aneroid pressure
rack travel mm Tolerance mm	: +- 0.10	→ hPa : 1500
		Rated speed rpm : 1100
rack travel mm		+ Del. quantity
Rated speed rpm		+ cm3/1000 strokes : 219.0
Tolerance 1/min	: +- 20	+ Tolerance + cm3/1000 strokes : +- 1.5
Rated speed rpm	: 200	Check tolerance
rated speed rpm	. 200	- cm3/1000s. : +- 4.5
CRT mm min.	; > 9.00	+ Spreed
	, , , , , , , , , , , , , , , , , , , ,	+ Tolerance
- <del></del>	<del></del>	+ cm3/1000 strokes : 8.0
TORQUE CONTROL		+ Check tolerance
		+ cm3/1000s. : 12.0
Rated speed rpm		<b>†</b>
rack travel mm		+ Aneroid pressure
Tolerance mm	: +- 0.05	+ hPa : 1500 + Rated speed rpm : 700
Rated speed rpm	: 1100	Del. quantity
rack travel mm		+ cm3/1000 strokes : 214.0
Tolerance mm		Tolerance
		cm3/1000 strokes : +- 3.0
Rated speed rpm	: 700	+ Check tolerance
rack travel mm		+ cm3/1000S. : +- 6.0
Tolerance mm	: +- 0.10	†
		+ Aneroid pressure
ANEROID/ALTITUDE	<u> </u>	
COMPENSATOR TEST		+ Del. quantity
COMPENSATOR TEST		cm3/1000 strokes : 160.0
		+ Tolerance
		+ cm3/1000 strokes : + 1.0
MEASUREMENT		+ Check tolerance
		+ cm3/1000s. : +- 4.0
Pressure hPa	: 350	†
rack travel mm	: -0.80	Aneroid pressure
Tolerance mm	: <b>←</b> 0.15	+ hPa : - + Rated speed rpm : 500
Pressure hPa	: 200	Del. quantity
rack travel mm	: -2.00	cm3/1000 strokes : 151.0
Tolerance mm	: +- 0.20	Tolerance
		+ cm3/1000 strokes : + 1.0
Pressure hPa	: 975	Check tolerance
rack travel mm	: 0.50	+ cm3/1000s. : +- 4.0
Tolerance mm	: <del>←</del> 0.05	+

### BREAKAWAY

Rack travel in mm : 12.70
Rated speed rpm : 1140
Tolerance 1/min : +- 8

### STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 205.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000s. : +- 19.0

# LOW IDLE

Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s.: +- 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0

End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 26.08.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 746 6090

Injection pump

Pump designation : PES6P130A720RS7411 EP type number : 0 412 736 808

Governor

Governer design. : RQ275/950PA1274 Governer no. : 0 421 801 807

Cust. part No. : 221 575

Customer-spec. information Customer : RABA

: siehe Bemerkung Motor

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance \*C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 : +- 0.1 Tolerance bar

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0 x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

: 5.50 Prestroke mm : +- 0.05 Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50 : +- 0.50 Tolerance mm

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Tolerance :  $\leftarrow$  0.10 Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.10 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 263.0

Tolerance cm3/1000 strokes	: +- 1.0	Tolerance mm : +- 0.10  Rated speed rpm : 1200
Check tolerance	T	guide sleeve
	: +- 4.0 +	travel mm : 11.50 Tolerance mm : +- 0.50
Spreed Tolerance	İ	
cm3/1000 strokes	: 5.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s.	9.0	Rated speed rpm : 1059
Rated speed rpm :	: 275	Rack travel in mm : 10.90 Tolerance mm : +- 1.30
Rack travel in mm : Tolerance mm :		FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes :	: 24.0	Rated speed rpm : 600 Aneroid pressure
Tolerance	+	hPa : 1500
cm3/1000 strokes : Check tolerance	: +- 3.0	Del. quantity cm3/1000 strokes : 263.0
cm3/1000s. :	: +- 6.0	Tolerance
Spreed Tolerance	<u>†</u>	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes :	: 8.0	cm3/1000s. : +- 4.0
Check tolerance cm3/1000s.	12.0	Spreed Tolerance
CHD7 10005	Ţ	cm3/1000 strokes : 5.0
(B) SETTING OF INJE	ECTION PUMP	Check tolerance cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL	-	CONTROL LEVER
Rated speed rpm :	275	control lever
guide sleeve travel mm :	2.06	position degree : 34.0 tolerance degree : +- 4.0
	+ 0.20	-
Datad aroad nam	1007	control lever position degree : 96.0
guide sleeve	<del>}</del>	tolerance degree : +- 4.0
	6.56 + 0.15	RATED SPEED
Tolerance mm :	T 0.13	RATED SPEED
•	950	rack travel mm : 12.10
guide sleeve travel mm :	6.00	Rated speed rpm : 1095 Tolerance 1/min : +- 5
Tolerance mm :		
	→ 0.10 +	
Rated speed rom :	+	rack travel mm : 4.00 Rated speed rpm : 1190
guide sleeve	361	rack travel mm : 4.00 Rated speed rpm : 1190 Tolerance 1/min : +- 15
guide sleeve travel mm :	361 4.45	
guide sleeve travel mm : Tolerance mm :	361 4.45 + 0.10	rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve	361 4.45	rack travel mm : 0.50

	† rack travel mm : 9.85
LOW IDLE	† Tolerance mm : +- 0.15
COM TOCK	Pressure hPa : 600
	rack travel mm : 12.05 Tolerance mm : +- 0.05
control lever position degree : 73.0	† Tolerance mm : +- 0.05
tolerance degree : +- 4.0	Ţ
-	+
control lever position degree : 12.0	FUEL DEL TUEDY CHADACTEDICTICS
position degree : 12.0 tolerance degree : +- 4.0	fuel delivery characteristics
total alloc degree in the first	Aneroid pressure
Testing:	+ hPa : 1500
Dated aread area a 275	+ Rated speed rpm : 1050
Rated speed rpm : 275 rack travel mm : 4.20	+ Del. quantity + cm3/1000 strokes : 252.0
Tolerance mm : +- 0.10	+ Tolerance
	+ cm3/1000 strokes : +- 3.0
rack travel mm : 2.00	+ Check tolerance + cm3/1000S. ; +- 6.0
Rated speed rpm : 335 Tolerance 1/min : +- 20	cm3/1000s. : +- 6.0
rocer directivities and a constant	Aneroid pressure
Rated speed rpm : 175	hPa : -
CRT mm min. : > 6.80	Rated speed rpm : 500
	+ Del. quantity + cm3/1000 strokes : 147.0
	Tolerance
TORQUE CONTROL	cm3/1000 strokes : +- 2.0
Rated speed rpm : 600	+ Check tolerance + cm3/1000S. : +- 4.0
Rated speed rpm : 600 rack travel mm : 13.10	+ cm5/10005. : +- 4.0
Tolerance mm : + 0.05	+
4050	+ BREAKAWAY
Rated speed rpm : 1050 rack travel mm : 13.10	Ī
Tolerance mm : +- 0.10	A Rack travel in mm: 12.10
	Rated speed rpm : 1095
ANEROID (A) TITUDE	Tolerance 1/min : +- 5
ANEROID/ALTITUDE COMPENSATOR TEST	I
0555710	+ STARTING FUEL DELIVERY
SETTING	Rated speed rpm : 100
Rated speed rpm : 500	rack travel mm : 20.50
Pressure hPa : 1500	+ Del. quantity
rack travel mm : 13.10 Tolerance mm : +- 0.05	+ cm3/1000 strokes : 110.0 + Tolerance
Tolerance mm : +- 0.05	cm3/1000 strokes : +- 20.0
MEASUREMENT	+ Check tolerance
B	- cm3/1000s. : +- 24.0
Pressure hPa : - Rated speed rpm : 500	İ
rack travel mm : 8.20	1
Tolerance mm : + 0.20	
Dated and dame : 500	+ LOW IDLE
Rated speed rpm : 500	Rated speed rpm : 275
Pressure hPa : 380	+

Del. quantity		
cm3/1000 strokes	:	24.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

End of test specification sheet

Note remarks

Test sheet : KHD Edition : 31.3.95

Replaces

Test oil : ISO-4113

Combination no. : 0 400 876 242

Injection pump

Pump designation : PES6A95D41ORS2471 EP type number : 0 410 896 952

Governor

Governor design. : RS325/1325A0C691L

Customer-spec. information Customer : KHD

: BF6L 913 C Engine

1st version kW : 141.0 Rated speed >: 2500

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C> : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 0 681 343 009 assembly>

Opening

pressure, bar> : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall>thickness

x Length mm> : 6.00x2.00x600

(A) Injection pump setting values

- > Insp. values in parentheses
- > Set equal delivery quant.
- > per values \_

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

: 1.90...2.00 Prestroke mm : (1.85...2.05)

Rack travel in mm : 9.00...12.00 Firing order : 1-5- 3- 6- 2- 4 Firing order

Phasing : 0-60-120-180-240-300

Tolerance  $+ - ^{\circ} > : 0.50 (0.75)$ 

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1250

Rack travel in mm : 11.70...11.80

Del.quantity cm3/: 9.6...9.8

> 100 s: (9.4...10.0)

cm3 : 0.3Spread

100 s: (0.6)

2nd speed rpm : 325 Rack travel in mm : 7.6...7.8 Del.quantity cm3/: 0.9...1.5 100 s: (0.6...1.7)

cm3 : 0.3Spread

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

rpm : 800 Speed

Rack travel in mm : 0.30...1.00

Governor spring pre-tension Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Aneroid pressure h: 900

Del.quantity : 106.0...107.0 1000 : (104.0...109.0) >

: 3.50 Spread cm3

1000 : (6.00)

RATED SPEED

1st version

Control lever

position> degrees: 49...57

Testing:

1st rack travel in: 10.50 rpm : 940...950 Speed 2nd rack travel in: 4.00

rpm : 1040...1070 Speed

4th rack travel in: 1520 Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever

position degrees: 17...25 Setting point w/out bumper spring

rpm : 325 Rack travel in mm: 8.5

Testing:

rpm : 100 Speed Minimum rack trave: 10.00

Speed rpm : 325 Rack travel in mm : 8.40...8.60

Rack travel in mm : 6.00

Speed rpm : 400...425

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 11.60...11.70

2nd speed rpm : 500

Rack travel in m: 11.60...11.80

Aneroid/Altitude Compensator Test

1st version

Setting

rpm : 1250 Speed hPa : 900 Pressure

Rack travel mm : 11.60...11.70

Measurement

1/min : \* Speed

1st pressure hPa : \* Rack travel in m: \* 2nd pressure hPa : \* Rack travel in m: \*

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600 rpm : 800

Del.quantity cm3/: 104.0...105.0
> 1000 s: (102.0...107.0)
Aneroid pressure h: 300
Speed rpm : 500

Del.quantity cm3/ : 61.0...62.0 1000 s: (59.0...64.0)

Aneroid pressure h: -Speed rpm : 650

Del.quantity cm3/: 84.0...85.0 1000 s: 82.0...87.0) **BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 10.60

rpm : 1365...1375 Speed

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 120.0...130.0 1000 s: (110.0...140.0)

Remarks:

\* Value only applies to initial setting of LDA spring. Ultimate setting of the LDA spring is performed by way of the appropriate

setting given in the delivery curve.

Note remarks

Test sheet : GUA Edition : 27.8.96

Replaces :

Test oil : ISO-4113

Combination no. : 0 401 830 701

Injection pump

Pump designation : PE12P130A120LS3094

EP type number : 0 411 830 700

Governor

Governor design. : RQV350...900PA802

Governer no. : 0 421 813 312

Customer—spec. information Customer : GUASCOR

Engine : E318

TEST BENCH REQUIREMENTS

Test oil

inlet temp. \*C> : 38...42

Overflow valve

> : 1 417 413 025

Inlet press., bar: 1.50

Test nozzle holder

assembly> : 0 681 443 022

Opening

pressure, bar> : 172...175

Test lines : 1 680 750 080

Outside diameter x Wall>thickness

x Length mm> : 8.00x2.00x1000

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Rack travel in mm : 9.00...12.00

Firing order : 1-12-9-4-5-8-11-2-3-

10-7-6

Phasing : 0-45-60-105-120-165-180-225-240-285-300-

345

Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ 

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 900

Rack travel in mm : 9.40...9.50

Del.quantity cm3/: 25.5...25.9

> 100 s: (25.2...26.2)

Spread cm3 : 0.5

> 100 s: (0.9)

2nd speed rpm : 350.0 Rack travel in mm : 4.0...4.2

Del.quantity cm3/: 2.1...2.7 > 100 s: (1.8...3.0)

Spread cm3 : 0.8 > 100 s: (1.2)

GUIDE SLEEVE POSITION Control-lever position

Degree: -1 ed rpm : 940

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm: 900

Del.quantity : 255.0...259.0 > 1000 : (252.0...262.0)

Spread cm3 : 5.00 > 1000 : (9.00)

RATED SPEED

1st version Control lever

position> degrees: 58...64

Testing:

1st rack travel in: 8.40 Speed rpm : 940...950 2nd rack travel in: 4.00

Speed rpm : 970...1000

4th rack travel in: 1100

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...14

Testing:

Speed rpm : 100 Minimum rack trave: 5.80 Speed rpm : 350 Rack travel in mm : 4.00...4.20

CONSTANT REGULATION

Speed rpm : 355...465

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 8.40 Speed rpm : 940...950

Remarks:

Note remarks

Test sheet : VOL Edition : 23.3.92

Replaces : -

Test oil : ISO-4113

Combination no. : 0 401 846 539

Injection pump

Pump designation: PE6P110A320RS483-5

Governor

Governor design. : RQV250...1200PA918-3

Customer-spec. information Customer : VOLVO

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C> : 38...42

Overflow valve

> : 1 417 413 025

Inlet press., bar: 1.50

Test nozzle holder

assembly> : 0 681 343 009

Opening

pressure, bar> : 172...175

Test lines : 1 680 750 015

Outside diameter x Wall>thickness

x Length mm> : 6.00X1.50X600

(A) Injection pump setting values

- > Insp. values in parentheses
- > 1115p. values in parentinese.
- > Set equal delivery quant.

> per values \_\_\_\_

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

·

Prestroke mm : 3.00...3.10 > : (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

inds mg

Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ 

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 700

Rack travel in mm : 12.70...12.80

Del.quantity cm3/: 13.2...13.4

> 100 s: (13.0...13.6)

/ 100 5. (15.0...15.0

Spread cm3: 0.4

> 100 s: (0.7)

2nd speed rpm : 250.0 Rack travel in mm : 5.3...5.5 Del.quantity cm3/ : 1.6...2.0 > 100 s: (1.3...2.3)

Spread cm3 : 0.3 > 100 s: (0.6)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.10...1.30

2nd speed rpm : 380

travel mm : 2.30...2.60

3rd speed rpm : 500

travel mm : 2.90...3.30

4th speed rpm : 1260

travel mm : 7.70...7.90

5th speed rpm : 1400

travel mm : 9.00...9.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1330

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm: 700 Aneroid pressure h: 1000

Del.quantity : 132.0...134.0

> 1000 : (129.0...137.0)

Spread cm3 : 4.00 > 1000 : (7.50)

RATED SPEED

1st version

Control lever

position> degrees: 54...62

Testing:

1st rack travel in: 11.70

rpm : 1260...1270 Speed

2nd rack travel in: 4.00 rpm : CA. 1450 Speed 4th rack travel in: 1600

rpm : 0.00...1.00 Speed

LOW IDLE 1

Control lever

position degrees: 6...14

Testing:

Speed : 100 rpm Minimum rack trave: 6.80 rpm : 250 Speed

Rack travel in mm : 5.30...5.50

CONSTANT REGULATION

rpm : 250...450 Speed

Aneroid/Altitude Compensator Test

1st version

Setting

: 500 Speed rpm Pressure hPa : 1000

: 12.70...12.80 Rack travel mm

Measurement

 $1/\min : 500$ Speed

1st pressure hPa : -

Rack travel in m: 9.30...9.50

2nd pressure hPa : 230

Rack travel in m: 9.50...9.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 700 Del.quantity cm3/ : 71.0...74.0 1000 s: (68.0...77.0)

**BREAKAWAY** 

1st version

1mm rack travel less than

full load rack tr: 11.70

rpm : 1260...1270 Speed

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 170.0...200.0 1000 s: (166.0...204.0) Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250

Rack travel in mm : 5.30...5.50 Del.quantity cm3/: 16.0...20.0 > 1000 s: (13.0...23.0)

cm3 : 3.00 Spread 1000 s: (6.00)

Remarks:

Delivery-valve spring pre-tension =

2.40...2.60 mm.

Permissible alteration from 2.20...2.90

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : SCA : 14.6.94 Edition : 2.11.93 Replaces : ISO-4113 Test oil Combination no. : 0 401 846 950 Injection pump Pump designation : PE6P110A720RS3289 : 0 411 816 781 EP type number Governor Governor design. : RQV200...1100PA555-5 : D 421 813 943 Governer no. Customer-spec. information Customer : SCANIA : DS11 63A Engine TEST BENCH REQUIREMENTS Test oil inlet temp. °C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 104 assembly> **Opening** : 250...253 pressure, bar> Orifice plate diameter mm> : 0,7 Test lines : 1 680 750 008 Outside diameter x Wall>thickness x Length mm> : 6.00x2.00x600 (A) Injection pump setting values

> Insp. values in parentheses
> Set equal delivery quant.

Rack travel in mm : 9.00...12.00

: 3.30...3.40

: (3.25...3.45)

> per values \_\_\_\_

BEGINNING OF DELIVERY

Prestroke mm

Test pressure, bar: 25...27

Phasing : 0-60-120-180-240-300 Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING rpm: 700 1st speed Rack travel in mm : 12.30...12.40 Del.quantity cm3/: 17.1...17.3 100 s: (16.9...17.5) cm3 : 0.6Spread 100 s: (0.9) rpm : 325.0 2nd speed Rack travel in mm: 6.5...6.7 Del.quantity cm3/: 1.9...2.5 100 s: (1.6...2.8) cm3 : 0.3Spread 100 s: (0.6) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL rpm : 250 1st speed : 0.70...1.10 travel mm rpm : 350 2nd speed : 2.00...2.60 travel mm 3rd speed rpm : 650 travel mm : 4.90...5.50 rpm : 1145 4th speed : 8.30...8.50 travel mm 5th speed rpm : 1300 : 9.70...10.10 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1130 Speed Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 700 Speed Aneroid pressure h: 1500 : 171.0...173.0 Del.quantity 1000 : (168.0...176.0) > Spread cm3 : 8.00

Firing order

: 1-5-3-6-2-4

1000 : (12.0)

RATED SPEED

1st version Control lever

position> degrees: 112...120

Testina:

1st rack travel in: 11.30

rpm : 1140...1150 Speed

2nd rack travel in: 4.00

rpm : 1280...1310 Speed

4th rack travel in: 1420

Speed rpm : 0.00...1.00

LOW IDLE 1 Control lever

position degrees: 65...73

Testina:

rpm : 100 Speed Minimum rack trave: 8.20 rpm : 325 Speed

Rack travel in mm : 6.50...6.70

Rack travel in mm : 2.00

rpm : 400...460 Speed

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500 Pressure hPa : 1500

Rack travel mm : 12.30...12.40

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 9.80...10.20

2nd pressure hPa : 200

Rack travel in m: 11.70...11.80 3rd pressure hPa : 140

Rack travel in m: 10.65...10.95

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500

Speed

Aneroid pressure h: -

Speed

Del.quantity cm3/: 112.0...116.0

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30

Speed

rpm : 1140...1150

STARTING FUEL DELIVERY

rpm : 100

Del.quantity cm3/: 240.0...290.0

Rack travel in mm : 20.00...21.00

LOW IDLE

rpm : 325 Speed

Rack travel in mm : 6.50...6.70

Remarks:

Delivery-valve spring pre-tension

 $3.2...3.4 \, \text{mm}$ .

Permissible alteration of 3.0...3.5 mm

Start-of-delivery setting with ROBO diaphragm.

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

rpm : 1100

Del.quantity cm3/: 160.0...168.0

1000 s: (158.0...170.0)

rpm : 500

1000 s: (110.0...118.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 3.50...3.60 : (3.45...3.65) Rack travel in mm : 15.00...19.00 Note remarks : 1-8-7-2-6-5-Firing order Test sheet : KHD Edition : 3.12.93 Reptaces : ISO-4113 Test oil Phasing : 0-45-90-135-180-225-Combination no. : 0 401 848 825 270-315 Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ Injection pump Pump designation : PE8P12OA92O/5LS32O8 Time to cyl. no. : 1 EP type number : 0 411 828 721 BASIC SETTING Governor Governor design: : RQ200/1200PA1088 : 0 421 801 692 1st speed rpm: 1150 Governer no. Customer-spec. information Rack travel in mm : 13.20...13.30 Customer : KHD Del.quantity cm3/: 16.6...16.8 : BF8L513CP Engine 100 s: (16.3...17.1) 1st version kW : 235.0 Rated speed >: 2400 Spread cm3 : 0.6TEST BENCH REQUIREMENTS > 100 s: (1.0) 2nd speed rpm : 300.0 Rack travel in mm : 7.6...7.8 Test oil inlet temp. \*C> : 38...42 Del.quantity cm3/: 2.0...2.6 100 s: (1.7...2.9) Overflow valve cm3 : 0.9 : 1 417 413 025 Spread 100 s: (1.3) Inlet press., bar: 1.50 (B) Setting of injection pump Test nozzle holder with governor : 1 688 901 019 assembly> GUIDE SLEEVE TRAVEL rpm : 300 Opening 1st speed : 1.00...1.40 pressure, bar> : 207...210 travel mm rpm : 400 2nd speed Orifice plate travel mm : 2.20...2.80 rpm : 550 diameter mm> 3rd speed : 0,8 travel mm : 3.50...4.10 4th speed rpm : 1200 Test lines : 1 680 750 067 : 8.20...8.40 travel mm 5th speed rpm : 1285 Outside diameter travel mm : 9.00...9.40 x Wall>thickness : 6.00x1.50x1000 GUIDE SLEEVE POSITION x Length mm> Control-lever position (A) Injection pump setting values Degree: -1 rpm : 1220 > Insp. values in parentheses Leega Rack travel in mm : 15.20...17.80 > Set equal delivery quant. > per values \_\_\_\_ FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

rpm : 1150

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Aneroid pressure h: 900

: 166.0...168.0 Del.quantity

1000 : (163.0...171.0) >

cm3 : 6.00 1000 : (10.00) Spread >

RATED SPEED

1st version Control lever

position> degrees: 116...124

Testing:

1st rack travel in: 12.20

rpm : 1190...1200 Speed

2nd rack travel in: 4.00

Speed rpm : 1310...1340

4th rack travel in: 1450

rpm : 0.00...1.00Speed

LOW IDLE 1

Control lever

position degrees: 81...89

Testing:

rpm : 100 Speed Minimum rack trave: 9.20

rpm : 300 Speed

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

rpm : 300...510 Speed

TORQUE CONTROL

Dimension a mm : 0.40

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 13.20...13.30 ad speed rpm : 700

2nd speed

Rack travel in m: 13.50...13.70

Aneroid/Altitude

Compensator Test

1st version

Setting

: 500 rpm Speed hPa : 900 Pressure

Rack travel mm : 13.40...13.60

Measurement

Speed  $1/\min : 500$ 

1st pressure hPa : -

Rack travel in m: 12.80...13.00

2nd pressure hPa : 500

Rack travel in m: 13.10...13.20

START CUT-OUT

1/min: 220 (240) Speed

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900 rpm : 700

Del.quantity cm3/: 167.0...171.0 1000 s: (164.0...174.0)

Aneroid pressure h: rpm : 500 Speed

Del.quantity cm3/: 134.0...136.0

1000 s: (131.0...139.0)

**BREAKAWAY** 

1st version

1mm rack travel less than

full load rack tr: 12.20

rpm : 1190...1200 Speed

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 170.0...190.0

Remarks:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

**APPLICATION** 

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Note remarks Test sheet : SCA 11,1 s Edition : 03.12.92 Phasing : 0-60-120-180-240-300 Replaces : 22,11,91 Test oil : ISO-4113 Tolerance  $+ - ^{\circ} > : 0.50 (0.75)$ Combination no. : 0 401 876 778 Time to cyl. no. : 1 Injection pump BASIC SETTING Pump designation : PE6P110A720RS3263 EP type number : 0 411 816 776 1st speed rpm: 700 Governor Rack travel in mm : 11.20...11.30 Governor design. : RSV350...1100P1A481-: 0 421 833 344 Del.quantity cm3/: 12.0...12.2 Governer no. 100 s: (11.7...12.5) Customer-spec. information Customer : SCANIA Spread cm3 : 0.5Engine : DN11 47 > 100 s: (0.8) TEST BENCH REQUIREMENTS rpm : 350 2nd speed Test oil Rack travel in mm: 6.7...7.1 inlet temp. °C> : 38...42 Del.quantity cm3/: 2.0...2.4 100 s: (-) > Overflow valve Spread cm3 : 0.3: 1 417 413 025 100 s: (0.6) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Degree: -3 Test nozzle holder : 1 688 901 104 rpm : 800 assembly> Speed Rack travel in mm : 0.30...0.70 Openina FULL LOAD DELIV. AT FULL LOAD STOP pressure, bar> : 250...253 1st version Orifice plate rpm : 700 diameter mm> : 0,7 Speed : 120.0...122.0 Del.quantity > 1000 : (117.0...125.0) Test lines : 1 680 750 008 cm3 : 5.00 Spread 1000 : (8.00) Outside diameter RATED SPEED x Wall>thickness x Length mm> : 6.00x2.00x600 1st version (A) Injection pump setting values Control Lever > Insp. values in parentheses position> degrees: 82...90 > Set equal delivery quant. Testing: > per values \_\_\_\_ 1st rack travel in: 10.20 rpm : 750...755 BEGINNING OF DELIVERY Speed Test pressure, bar: 25...27 2nd rack travel in: 4.00 rpm : 784...792 Speed : 3.30...3.40 4th rack travel in: 920 Prestroke mm

rpm : 0.30...1.40

Speed

: (3.25...3.45)

LOW IDLE 1 Control lever

position degrees: 82...90

Setting point w/out bumper spring

rpm : 790 Rack travel in mm : 4.6 Speed rpm : 790

Rack travel in mm : 4.50...4.70

## BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.20 rpm : 750...755 Speed

## STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 220.0...270.0 > 1000 s: (216.0...274.0) Rack travel in mm : 20.00...21.00

### HIGH IDLE

1st version

rpm : 790 Speed

Rack travel in mm : 4.50...4.70 Spread cm3 : 7.00 1000 s: (10.0)

### Remarks:

Note remarks

Test sheet : MB

: 26.02.93 Edition Replaces : 3.2.93 Test oil : ISO-4113

Combination no. : 0 401 876 796

Injection pump

Pump designation : PE6P12OA32OLS3815-13

: 0 411 826 782 EP type number

Governor

: RSV675...1050P0A820-Governor design.

12

: D 421 833 401 Governer no.

Customer-spec. information

Customer : MERCEDES-BENZ

Engine : CM441A

: 162.0 1st version kW Rated speed >: 2100

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C> : 38...42

Overflow valve

: 1 417 413 025 >

Inlet press., bar: 1.50

Overflow

quantity min.>1/h: 100...120

Test nozzle holder

: 1 688 901 019 assembly>

Opening

pressure, bar> : 207...210

Orifice plate

diameter mm> : 0,8

Test lines : 1 680 750 075

Outside diameter x Wall>thickness

: 8.00x2.50x1000 x Length mm>

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

: 3.60...3.70 Prestroke mm

: (3.55...3.75) Rack travel in mm : 9.00...12.00

Firing order : 6-3-5-2-4-1

: 0-60-120-180-240-300 Phasing

Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ 

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm: 1080

Rack travel in mm : 10.50...10.60

Del.quantity cm3/: 15.9...16.1

100 s: (15.6...16.4)

cm3 : 0.5Spread

100 s: (0.9)

rpm : 675.02nd speed Rack travel in mm: 3.1...3.7 Del.quantity cm3/: 1.4...2.0

100 s: (1.1...2.3)

cm3 : 0.8 Spread 100 s: (1.2)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3 rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

rpm : 1080 Speed

: 159.0...161.0 Del.quantity 1000 : (156.0...164.0) cm3 : 5.00

Spread

1000 : (9.00)

RATED SPEED

1st version Control lever

position> degrees: 89...97 Testing: 1st rack travel in: 9.50 rpm : 1110...1120 Speed 2nd rack travel in: 4.00 rpm : 1140...1158 Speed 4th rack travel in: 1250 Speed rpm : 0.30...1.40 LOW IDLE 1 Control lever position degrees: 73...81 Setting point w/out bumper spring Speed rpm : 675 Rack travel in mm : 3.4 Testing: rpm : 100 Speed Minimum rack trave: 19.50 Speed rpm : 675 Rack travel in mm : 3.30...3.50 SET IDLE AUXILIARY SPRING Rack travel in mm : 2.00 TORQUE CONTROL Torque control curve - 1st version rpm : 1080 1st speed Rack travel in m: 10.50...10.60 2nd speed rpm : 700 Rack travel in m: 12.50...12.70 3rd speed rpm : 975 Rack travel in m: 11.30...11.50 : 500 4th speed rpm Rack travel in m: 12.50...12.70 FUEL DELIVERY CHARACTERISTICS 1st version : 700 Speed rpm Del.quantity cm3/: 201.0...205.0 1000 s: (198.0...208.0) cm3 : 8.00 Spread 1000 s: (12.0) > **EREAKAWAY** 

Speed

1st version 1mm rack travel less than > full load rack tr: 9.50 : 1110...1120

rpm

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/: 190.0...210.0 1000 s: (186.0...214.0)

Remarks:

In order to adjust and test the EP combination, set full-load speed regul. at 1110...1120 1/min. Then set speed regul. to 1060...1070 1/min again.

**APPLICATION** 

Forage harvester

Note remarks

Test sheet : NAV : 18,10,93 Edition : 5.3.93 Replaces

Test oil

: ISO-4113

Combination no.

: 0 402 046 838

Injection pump

Pump designation : PES6P100A320LS3306

EP type number

: 0 412 006 703

Governor

Governor design. : RQV350...1200PA1042-

Governer no.

: 0 421 815 320

Customer-spec. information Customer : NAVISTAR

Engine

: DTA-466

1st version kW : 172.0 >: 2400 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. \*C> : 38...42

Overflow valve

: 2 417 413 076 >

Inlet press., bar: 2.80

Test nozzle holder

: 1 688 901 101 assembly>

Openina |

: 207...210 pressure, bar>

Orifice plate

diameter mm> : 0,6

Test lines : 1 680 750 015

Outside diameter

x Wall>thickness

x Length mm> : 6.00x1.50x600

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 2.95...3.05 : (2.8...3.1) Rack travel in mm : 14.0...17.0

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance  $+ - ^{\circ} > : 0.50 (0.75)$ 

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 800

Rack travel in mm : 13.5...13.6

Del.quantity cm3/: 14.75...14.95

100 s: (14.55,...15.15)

Spread cm3 : 0.8

> > 100 s: (1.2)

2nd speed rpm : 350.0Rack travel in mm: 6.0...6.2 Del.quantity cm3/: 1.3...1.7 100 s: (1.05...1.95)

cm3 : 0.4Spread 100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

>

1st speed rpm : 350

travel mm : 1.8...2.0

rpm : 500 2nd speed

: 3.5...3.9 travel mm

3rd speed rpm : 800

travel mm : 6.2...6.6

4th speed rpm : 1250

: 9.3...9.5 travel mm

rpm : 1400 5th speed

travel mm : 10.5...11.0

GUIDE SLEEVE POSITION

Cortrol-lever position

Degree: -1

rpm : 1440 Speed

Rack travel in mm : 7.0...13.0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 1200 Del.quantity : 147.5...149.5 > 1000 : (145.5...151.5) START CUT-OUT cm3 : 8.00 1000 : (12.0) Spread 1/min: 280 (290) Speed > RATED SPEED FUEL DELIVERY CHARACTERISTICS 1st version 1st version Control lever position> degrees: 116...124 Aneroid pressure h: 1200 rpm : 800 Speed Del.quantity cm3/: 147.5...149.5 Testing: 1st rack travel in: 13.90 1000 s: (145.5...151.5) > Speed rpm : 1270...1300 cm3 : 8.00Spread 2nd rack travel in: 4.00 > 1000 s: (12.0) Speed rpm : 1440...1450 Aneroid pressure h: 1200 Speed rpm : 1200 Del.quantity cm3/: 178.0...182.0 4th rack travel in: 1550 Speed rpm : 0.00...1.00 > 1000 s: (176.0...184.0) cm3 : 8.00 LOW IDLE 1 Spread 1000 s: (12.0) Control lever position degrees: 74...82 Aneroid pressure h: -Speed rpm : 900 Del.quantity cm3/ : 69.0...73.0 Testing: 1000 s: (67.0...75.0) rpm : 275 Speed Minimum rack trave: 7.60 Speed rpm : 350 Rack travel in mm: 6.0...6.2 BREAKAWAY 1st version CONSTANT REGULATION Speed rpm : 350...520 1mm rack travel less than full load rack tr: 13.90 TORQUE CONTROL Torque control curve - 1st version Speed rpm : 1250...1280 1st speed rpm : 800 Rack travel in m: 13.5...13.6 STARTING FUEL DELIVERY 2nd speed rpm : 1200 Rack travel in m: 14.9...15.1 3rd speed rpm : 600 rpm : 100 Speed Rack travel in m: 12.6...13.0 Del.quantity cm3/: 120.0...160.0 1000 s: (115.0...165.0) Aneroid/Altitude LOW IDLE Compensator Test Speed rpm : 350 Rack travel in mm: 6.0...6.2 1st version Del.quantity cm3/: 13.0...17.0 Settina > 1000 s: (11.5...19.5) rpm : 1200 Speed hPa : 1200 cm3 : 4.00 Pressure Spread Rack travel mm : 14.6...14.8 1000 s: (6.50) Remarks: Measurement Speed 1/min: 1200 : NAVISTAR #1819913091 1st pressure hPa : -Rack travel in m: 9.4...9.8 2nd pressure hPa : 300 Rack travel in m: 10.7...10.8

Rack travel in m: 13.2...13.6

3rd pressure hPa : 730

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : NAV Test sheet : 24.02.94 Edition : 11.93 Replaces : ISO-4113 Test oil Combination no. : 0 402 046 845 Injection bumb Pump designation : PES6P100A320LS3309 : 0 412 006 704 EP type number Governor Governor design. : RQV350...1200PA1042-6K : 0 421 815 330 Governer no. Customer-spec, information Engine : DTA-408 : 142.0 1st version kW >: 2600 Rated speed >: 2600 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. \*C> : 38...42 Overflow valve : 2 417 413 076 Inlet press., bar: 2.80 Test nozzle holder assembly> : 1 688 901 101 Opening : 207...210 pressure, bar> Orifice plate diameter mm> : 0,6 : 1 680 750 015 Test lines Outside diameter x Wall>thickness x Length mm> : 6.00x1.50x600

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

Test pressure, bar: 16...18

> per values \_\_\_\_

BEGINNING OF DELIVERY

Prestroke mm : 2.95...3.05 : (2,9...3.1)Rack travel in mm : 14.0...17.0 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 900 Rack travel in mm : 12.1...12.2 Del.quantity cm3/: 13.25...13.45 100 s: (13.15...13.65) cm3 : 0.8Spread > 100 s: (1.2) rpm : 350.02nd speed Rack travel in mm: 5.1...5.3 Del.quantity cm3/: 1.45...1.85 100 s: (1.2...2.1) cm3 : 0.4Spread 100 s: (0.7) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 350 travel mm : 1.6...2.0 2nd speed rpm : 500 : 3.8...4.2 travel mm 3rd speed rpm : 800 travel mm : 5.8...6.2 rpm : 1300 4th speed : 8.9...9.1 travel mm rpm : 1500 5th speed : 10.4...10.8 travel mm FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 900 Speed Aneroid pressure h: 1200 : 132.5...134.5 Del.quantity 1000 : (130.5...136.5) > : 8.00 Spread cm3 1000 : (12.0)

RATED SPEED

1st version

Control Lever

position> degrees: 112...122

Testing:

1st rack travel in: 11.40

rpm : 1390...1420 Speed

2nd rack travel in: 4.00

Speed rpm : 1530...1540

4th rack travel in: 1650

rpm : 0.00...1.00Speed

LOW IDLE 1

Control lever

position degrees: 69...81

Testing:

Speed man : 275 Minimum rack trave: 6.70

rpm : 350 Speed

Rack travel in mm : 5.10...5.30

CONSTANT REGULATION

beed rpm : 350...520

TORQUE CONTROL

Torque control curve - 1st version

rpm : 900 1st speed

Rack travel in m: 12.1...12.2

: 1300 2nd speed rpm

Rack travel in m: 12.4...12.6

rpm : 700 3rd speed

Rack travel in m: 11.4...11.8

Aneroid/Altitude

Compensator Test

1st version

Setting Speed

: 1300 rom

hPa : 1200 Pressure

Rack travel mm : 12.4...12.6

Measurement

 $1/\min : 1300$ Speed

1st pressure hPa : -

Rack travel in m: 8.4...8.8

2nd pressure hPa : 270

Rack travel in m: 9.6...9.7

3rd pressure hPa : 570

Rack travel in m: 11.2...11.6

START CUT-OUT

1/min : 280 (290) Speed

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

Speed rpm : 1300
Del.quantity cm3/: 139.0...143.0
> 1000 s: (137.0...145.0)
Spread cm3 : 8.00

1000 s: (12.0) >

Aneroid pressure h: rpm : 900 Speed

Del.quantity cm3/: 66.0...70.0

1000 s: (64.0...72.0)

**BREAKAWAY** 

1st version

1mm rack travel less than

full load rack tr: 11.40

Speed rpm : 1390...1420

STARTING FUEL DELIVERY

rpm : 100 Speed

Del.quantity cm3/: 120.0...160.0

1000 s: (115.0...165.0)

LOW IDLE

>

rpm : 350 Speed

Rack travel in mm : 5.1...5.3

Del.quantity cm3/: 14.5...18.5

> 1000 s: (12.0...21.0)

Spread cm3 : 4.00

1000 s: (6.50)

Remarks:

: NAVISTAR #1819922C91

Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS Test pressure, bar: 16...18 : 2.95...3.05 Note remarks Prestroke mm : (2.9...3.1) Rack travel in mm : 14.0...17.0 Test sheet : NAV : 24.02.94 Edition Firing order : 1-5-3-6-2-4 : 14.10.93 Replaces Test oil : ISO-4113 Combination no. : 0 402 046 846 Phasing : 0-60-120-180-240-300 Phasing Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ Injection pump Pump designation : PES6P100A320LS3309 : 0 412 006 704 EP type number Time to cyl. no. : 1 Governor : RQV350...1200PA1042-BASIC SETTING Governor design. : 0 421 815 331 1st speed rpm: 900 Governer no. Customer-spec. information Rack travel in mm : 11.0...11.1 Customer : NAVISTAR Del.quantity cm3/: 10.0...10.2 Engine : DTA-408 > 100 s: (9.8...10.4) 1st version kW : 130.5 >: 2600 cm3 : 0.8Rated speed Spread >: 2600 Rated speed 100 s: (1.2) TEST BENCH REQUIREMENTS rpm : 350.02nd speed Rack travel in mm : 5.1...5.3 Test oil Del.quantity cm3/: 1.45...1.85 inlet temp. \*C> : 38...42 100 s: (1.2...2.1) Overflow valve cm3 : 0.4Spread : 2 417 413 076 100 s: (0.7) (B) Setting of injection pump Inlet press., bar: 2.80 with governor Test nozzle holder assembly> : 1 688 901 101 GUIDE SLEEVE TRAVEL 1st speed rpm : 350 travel mm : 1.6...2.0 Opening rpm : 500 pressure, bar> : 207...210 2nd speed travel mm : 3.8...4.2 Orifice plate 3rd speed : 800 rpm diameter mm> : 0,6 travel mm : 5.8...6.2 4th speed 1300 rpm travel mm : 8.9...9.1 Test lines : 1 680 750 015 5th speed : 1500 rom : 10.4...10.8 travel mm Outside diameter FULL LOAD DELIV. AT FULL LOAD STOP x Wall>thickness : 6.00x1.50x600 x Length mm> 1st version (A) Injection pump setting values Speed rpm : 900 > Insp. values in parentheses Aneroid pressure h: 1200 Del.quantity : 100.0....2
> 1000 : (98.0...104.0) > Set equal delivery quant. > per values \_\_\_\_\_ : 8.00 Spread 1000 : (12.0) BEGINNING OF DELIVERY

# RATED SPEED 1st version Control lever position> degrees: 114...126 Testina: 1st rack travel in: 10.7 rpm : 1360...1390 Speed 2nd rack travel in: 4.00 rpm : 1500...1510 Speed 4th rack travel in: 1650 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 69...81 Testing: Speed rpm : 275 Minimum rack trave: 6.20 rpm : 350 Rack travel in mm : 5.10...5.30 CONSTANT REGULATION Speed rpm : 350...520 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 900 Rack travel in m: 11.0...11.1 2nd speed rpm : 1300 Rack travel in m: 11.7...11.9 3rd speed rpm : 700 Rack travel in m: 10.3...10.7 Aneroid/Altitude Compensator Test 1st version Setting : 1300 Speed rom hPa : 1200 Pressure Rack travel mm : 11.7...11.9 Measurement 1/min: 1300 Speed 1st pressure hPa : -Rack travel in m: 8.8...9.2 2nd pressure hPa : 270 Rack travel in m: 9.8...9.9 3rd pressure hPa : 580

Rack travel in m: 11.1...11.5

1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 Speed rpm : 1300 Del.quantity cm3/: 122.0...126.0 1000 s: (120.0...128.0) cm3 : 8.00Spread 1000 s: (12.0) > Aneroid pressure h: -Speed rpm: 900 Del.quantity cm3/: 69.0...73.0 > 1000 s: (67.0...75.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 10.70 Speed rpm : 1360...1390 STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/: 120.0...160.0 1000 s: (115.0...165.0) LOW IDLE Speed rpm : 350 Rack travel in mm: 5.1...5.3 Del.quantity cm3/: 14.5...18.5 1000 s: (12.0...21.0) > cm3 : 4.00 Spread 1000 s: (6.50) Remarks: : NAVISTAR #1819923c91 Limit shutoff stop screw to 1.0 mm.

A28

Speed

START CUT-OUT

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB : 4.9.96 Edition : 5,94 Replaces : ISO-4113 Test oil Combination no. : 0 402 646 796 Injection pump Pump designation : PE6P12OA32OLS7858 EP type number : 0 412 626 875 Governor Governor design. : RQ300/1050PA1030-12 Governer no. : 0 421 801 729 Customer-spec. information : MERCEDES-BENZ Customer : OM401LA Engine 1st version kW : 200.0 Rated speed >: 2100 TEST BENCH REQUIREMENTS Test oil inlet temp. °C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 105 assembly> Opening. pressure, bar> : 207...210 Orifice plate diameter mm> : 0,8 Test lines : 1 680 750 075 Outside diameter x Wall>thickness : 8.00x1.50x1000 x Length mm> (A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

Test pressure, bar: 25...27

> per values \_\_

BEGINNING OF DELIVERY

Prestroke mm : 5.50...5.60 : (5,45...5,65) Rack travel in mm : 20.00...21.00 Firing order : 6- 3- 5- 2- 4- 1 Phasing : 0-60-120-180-240-300 Tolerance  $+ - ^{\circ} > : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING rpm: 1050 1st speed Rack travel in mm : 11.70...11.80 Del.quantity cm3/: 18.9...19.1 > 100 s: (18.6...19.4) Spread cm3 : 0.5100 s: (0.9) rpm : 300 2nd speed Rack travel in mm : 4.9...5.5 Del.quantity cm3/: 1.6...2.2 100 s: (1.3...2.5) > Spread cm3 : 0.6100 s: (1.0) GUIDE SLEEVE POSITION Control-lever position Degree: 108...110 rpm : 600 Speed Rack travel in mm : 19.20...20.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1050 Speed Aneroid pressure h: 800 : 189.0...191.0 Del.quantity 1000 : (186.0...194.0) > : 5.00 Spread cm3 1000 : (9.00) > RATED SPEED 1st version Setting point: rpm : 600 Speed Rack travel in mm : 20.0 Testing: 1st rack travel in: 10.75

2nd rack travel in: 4.00 Speed rpm : 1160...1190 4th rack travel in: 1300 **BREAKAWAY** rpm : 0.00...1.50 Speed 1st version LOW IDLE 1 1mm rack travel less than Setting point w/out bumper spring rpm : 300 full load rack tr: 10.75 rpm : 1090...1106 Rack travel in mm: 5.2 Speed Testing: STARTING FUEL DELIVERY Speed rpm : 200 Minimum rack trave: 7.60 rpm : 300 rpm : 100 Speed Rack travel in mm : 5.10...5.30 Del.quantity cm3/: 210.0...230.0 Rack travel in mm : 2.00 1000 s: (206.0...234.0) rpm : 360...400 Speed Remarks: Aneroid/Altitude Compensator Test 1st version Setting : 400 Speed rom hPa : 800 Pressure : 11.70...11.80 Rack travel mm Measurement Speed  $1/\min : 400$ 1st pressure hPa : 350 Rack travel in m: 11.15...11.35 2nd pressure hPa : 200 Rack travel in m: 10.50...10.70 3rd pressure hPa : -Rack travel in m: 9.60...9.90 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 800 rpm : 550 Speed Del.quantity cm3/: 182.0...186.0 1000 s: (179.0...189.0) > cm3 : 8.00 Spread 1000 s: (12.0) Aneroid pressure h: 350 rpm : 400 Speed Del.quantity cm3/: 148.5...151.5 1000 s: (145.5...154.5) > Spread cm3 : -1000 s: (-) > Aneroid pressure h: rpm : 500 Speed Del.quantity cm3/ : 126.0...128.0 > 1000 s: (123.0...131.0) Spread cm3 : 8.00

rpm : 1090...1106

Speed

1000 s: (12.0)

B02

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB : 4.9.96 Edition : 10.93 Replaces : ISO-4113 Test oil Combination no. : 0 402 646 796 Injection pump Pump designation: PE6P120A320LS7858 EP type number : 0 412 626 875 Governor Governor design. : RQ300/1050PA1030-5 Governer no. : 0 421 801 665 Customer-spec. information Customer : MERCEDES-BENZ : 0M401LA Engine : 200.0 1st version kW Rated speed >: 2100 TEST BENCH REQUIREMENTS Test oil inlet temp. °C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 105 assembly> Openina pressure, bar> : 207...210 Orifice plate diameter mm> : 0,8 Test lines : 1 680 750 075 Outside diameter x Wall>thickness : 8.00x1.50x1000 x Length mm> (A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant. > per values \_

: 5.50...5.60 Prestroke mm : (5.45...5.65) Rack travel in mm : 20.00...21.00 : 6- 3- 5- 2- 4- 1 Firing order Phasing : 0-60-120-180-240-300 Tolerance  $+ - ^{\circ} > : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm : 1050 Rack travel in mm : 11.70...11.80 Del.quantity cm3/: 18.9...19.1 100 s: (18.6...19.4) cm3 : 0.5Spread > 100 s: (0.9) rpm : 300 2nd speed Rack travel in mm: 4.9...5.5 Del.quantity cm3/ : 1.6...2.2 100 s: (1.3...2.5) cm3 : 0.6Spread 100 s: (1.0) GUIDE SLEEVE POSITION Control-lever position Degree: 88...96 rpm : 600 Speed Rack travel in mm : 19.20...20.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1050 Speed Aneroid pressure h: 800 : 189.0...191.0 Del.quantity 1000 : (186.0...194.0) > : 5.00 cm3 Spread 1000 : (9.00) > RATED SPEED 1st version Setting point: : 600 Speed rpm Rack travel in mm : 20.0 Testing:

1st rack travel in: 10.75

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Speed rpm : 1090...1106 2nd rack travel in: 4.00 Speed rpm : 1160...1190 4th rack travel in: 1300 rpm : 0.00...1.50Speed LOW IDLE 1 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 5.2 Testing: Speed rpm : 200 Minimum rack trave: 8.00 rpm : 300 Speed Rack travel in mm : 5.10...5.30 Rack travel in mm : 2.00 Speed rpm : 360...400 Aneroid/Altitude Compensator Test 1st version Setting : 1050 Speed rom hPa : 800 Pressure Rack travel mm : 11.70...11.80 Measurement 1/min: 400 Speed 1st pressure hPa : 350 Rack travel in m: 10.90...11.00 2nd pressure hPa : 200 Rack travel in m: 10.10...10.30 3rd pressure hPa : -Rack travel in m: 9.60...9.90 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 800 rpm : 550 Speed Del.quantity cm3/: 182.0...186.0 1000 s: (179.0...189.0) > cm3 : 8.00 Spread 1000 s: (12.0) Aneroid pressure h: 350 rpm : 400 Speed Del.quantity cm3/: 148.5...151.5 1000 s: (145.5...154.5) > Spread cm3 : -1000 s: (-) > Aneroid pressure h: rpm : 500 Del.quantity cm3/: 126.0...128.0 1000 s: (123.0...131.0) > cm3 : 8.00Spread

> 1000 s: (12.0)

**BREAKAWAY** 

1st version 1mm rack travel less than >

full load rack tr: 10.75 Speed rpm : 1090...1106

STARTING FUEL DELIVERY

Remarks:

:

B04

Note remarks

Test sheet : SCA 9,0 h Edition : 03.12.92 : 16.2.90 Replaces : ISO-4113 Test oil

: 0 402 646 824 Combination no.

Injection pump

Pump designation : PE6P120A320RS7111

EP type number : 0 412 626 809

Governor

Governor design. : RQ750PA758 Governer no. : 0 421 801 297

Customer-spec. information

Customer : SAAB-SCANIA

Engine : DS 9 46,47

TEST BENCH REQUIREMENTS

Test oil

inlet temp. \*C> : 38...42

Overflow valve

: 1 417 413 025 >

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 019 assembly>

Opening |

: 207...210 pressure, bar>

Orifice plate

diameter mm> : 0,8

: 1 680 750 015 Test lines

Outside diameter

x Wall>thickness

: 6.00x1.50x600 x Length mm>

(A) Injection pump setting values

- > Insp. values in parentheses
- > Set equal delivery quant.

> per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

: 5.00...5.10 Prestroke mm : (4.95...5.15)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

: 0-60-120-180-240-300 Phasing

Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ 

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 700

Rack travel in mm : 12.30...12.40

Del.guantity cm3/: 17.7...17.9

100 s: (17.4...18.2)

Spread cm3 : 0.6

> 100 s: (0.9)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

rpm : 700 Speed

: 177.0...179.0 Del.quantity 1000 : (174.0...182.0) >

cm3 : 6.00 Spread > 1000 : (9.00)

RATED SPEED

1st version

Setting point:

rom Rack travel in mm : 16.5

Testing:

1st rack travel in: 11.30 rpm : 750...755 Speed 2nd rack travel in: 4.00 rpm : 784...797 Speed

5th rack travel in: 850

rpm : 0.00...1.00Speed

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30

rpm : 750...755 Speed

STARTING FUEL DELIVERY

B05

Speed rpm : 100 Del.quantity cm3/ : 240.0...290.0 Rack travel in mm : 20.00...21.00

# HIGH IDLE

1st version

Rack travel in mm : 5.80...6.00

cm3 : 4.00 1000 s: (7.00) Spread

Remarks:

**APPLICATION** 

Generator

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS Firing order : 1-5-3-6-2-4 Note remarks : SCA Test sheet Phasing Edition : 16.03.93 Replaces : ISO-4113 Test oil Combination no. : 0 402 646 881 BASIC SETTING Injection pump Pump designation : PE6P12OA72ORS7126 1st speed EP type number : 0 412 626 815 Governor Governor design. : RQV300...900PA795-4 Governer no. : 0 421 813 888 Customer-spec. information > Customer : SCANIA Spread Engine : DS 11 TEST BENCH REQUIREMENTS 2nd speed Test oil inlet temp. \*C> : 38...42 Overflow valve Spread : 1 417 413 025 Inlet press., bar: 2.30 Test nozzle holder : 1 688 901 019 assembly> 1st speed Opening travel mm pressure, bar> : 207...210 2nd speed travel mm Orifice plate 3rd speed diameter mm> : 0,8 travel mm 4th speed travel mm : 1 680 750 015 Test lines 5th speed travel mm Outside diameter x Wall>thickness : 6.00x1.50x600 x Length mm> (A) Injection pump setting values Speed > Insp. values in parentheses > Set equal delivery quant. > per values \_\_\_\_ BEGINNING OF DELIVERY

: 0-60-120-180-240-300 Tolerance  $+ - ^{\circ} > : 0.50 (0.75)$ Time to cyl. no. : 1 rpm: 700 Rack travel in mm : 14.10...14.20 Del.quantity cm3/: 23.4...23.6 100 s: (23.1...23.9) cm3 : 0.6100 s: (0.9) rpm : 200 Rack travel in mm: 4.4...4.6 Del.quantity cm3/: 1.5...1.9 100 s: (-) cm3 : 0.3100 s: (0.6) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL rpm : 300 : 1.30...1.70 rpm : 350 : 1.90...2.50 rpm : 650 : 4.70...5.30 rpm : 945 : 7.90...8.10 rpm : 1045 : 9.20...9.60 GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 970 Rack travel in mm : 11.50...13.10 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 700 Aneroid pressure h: 900 Del.quantity : 234.0...239.0) : 6.00 Spread cm3

Prestroke mm

Test pressure, bar: 25...27

Rack travel in mm : 9.00...12.00

: 5.00...5.10

: (4.95...5.15)

1000 : (9.00) RATED SPEED 1st version Control lever position> degrees: 93...101 Testing: 1st rack travel in: 13.10 rpm : 940...950 Speed 2nd rack travel in: 4.00 rpm : 1030...1060 Speed 4th rack travel in: 1150 rpm : 0.00...1.00 Speed LOW IDLE 1 Control lever position degrees: 61...69 Testing: Speed rpm : 100 Minimum rack trave: 10.00 Speed rpm : 300 Rack travel in mm : 4.50...4.70 Rack travel in mm : 2.00 rpm : 330...390 Speed Aneroid/Altitude Compensator Test 1st version Setting Speed man : 500 hPa : 900 Pressure Rack travel mm : 14.10...14.20 Measurement Speed  $1/\min : 500$ 1st pressure hPa : -Rack travel in m: 10.20...10.60 2nd pressure hPa : 440 Rack travel in m: 12.00...12.10 3rd pressure hPa : 270 Rack travel in m: 10.90...11.10 FUEL DELIVERY CHARACTERISTICS

1st version Aneroid pressure h: 1500 rpm : 950 Speed Del.quantity cm3/: 228.0...236.0 1000 s: (226.0...238.0) Aneroid pressure h: rpm : 500 Speed Del.quantity cm3/: 152.0...154.0 1000 s: (149.0...157.0) B08

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 12.80 Speed rpm : 990...1000

STARTING FUEL DELIVERY

rpm : 100

Del.quantity cm3/: 150.0...180.0 Rack travel in mm : 10.20...10.60

LOW IDLE

: 250 Speed rpm

Rack travel in mm : 4.60...4.80

Remarks:

Start-of-delivery setting with ROBO

:

diaphragm.

**APPLICATION** 

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : SCA : 16.08.93 Edition : 10.92 Replaces Test oil : ISO-4113 : 0 402 646 937 Combination no. Injection pump Pump designation : PE6P12OA72ORS71880 EP type number : 0 412 626 846 Governor Governor design. : RQV200...950PA725-7 Governer no. : 0 421 813 803 Customer-spec. information Customer : SCANIA Engine : DSC11 21 TEST BENCH REQUIREMENTS Test oil inlet temp. °C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 2.50 Test nozzle holder : 1 688 901 104 assembly> Opening pressure, bar> : 250...253 Orifice plate diameter mm> : 0,7 : 1 680 750 008 Test lines Outside diameter x Wall>thickness : 6.00x2.00x600 x Length mm> (A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant. > per values \_\_\_

: 1-5-3-6-2-4 Firing order Phasing : 0-60-120-180-240-300 Tolerance  $+ - ^{\circ} > : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 700 Rack travel in mm : 12.70...12.80 Del.quantity cm3/: 21.9...22.1 > 100 s: (21.6...22.4) Spread cm3 : 0.8> 100 s: (1.2) rpm : 225.0 2nd speed Rack travel in mm: 4.6...5.2 Del.quantity cm3/: 1.5...1.9 100 s: (1.2...2.2) > cm3 : 0.4Spread 100 s: (0.8) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 225 travel mm : 1.20...1.60 2nd speed rpm : 350 : 2.40...3.00 travel mm 3rd speed rpm : 650 travel mm : 4.50...5.10 4th speed rpm : 1045 travel mm : 8.40...8.60 rpm : 1125 5th speed : 9.30...9.70 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1150 Rack travel in mm : 7.00...12.00 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 700 Aneroid pressure h: 1500 Del.quantity : 219.0...221.0 > 1000 : (216.0...224.0) cm3 : 8.00Spread

BEGINNING OF DELIVERY

Prestroke mm

Test pressure, bar: 25...27

Rack travel in mm : 9.00...12.00

: 4.40...4.50

: (4.35...4.55)

1000 : (12.00)

RATED SPEED

1st version Control lever

position> degrees: 108...116

Testing:

1st rack travel in: 11.70

Speed rpm : 990...1000

2nd rack travel in: 4.00

Speed rpm : 1105...1135

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1 Control lever

position degrees: 58...66

Testing:

Speed rpm : 100 Minimum rack trave: 6.20 rpm : 225

Rack travel in mm : 4.60...4.80

Rack travel in mm : 2.00 rpm : 350...410 Speed

Aneroid/Altitude Compensator Test

1st version Setting

rpm : 500 Speed hPa : 1500 Pressure

Rack travel mm : 12.70...12.80

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 10.30...10.70

2nd pressure hPa : 440

Rack travel in m: 12.00...12.10

3rd pressure hPa : 270

Rack travel in m: 10.90...11.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500 rpm : 950

Del.quantity cm3/ : 202.0...210.0 1000 s: (200.0...212.0)

Aneroid pressure h: -

rpm : 500 Speed

Del.quantity cm3/: 151.0...155.0 > 1000 s: (149.0...157.0)

**B10** 

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70

Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 150.0...180.0 1000 s: (146.0...184.0) Rack travel in mm : 10.30...10.70

LOW IDLE

Speed rpm : 225

Rack travel in mm : 4.60...4.80

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

Start-of-delivery setting with ROBO diaphragm.

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 5.50...5.60 : (5.45...5.65) Rack travel in mm : 20.00...21.00 Note remarks : 8- 7- 2- 6- 3- 5-Firing order : MB Test sheet : 28.10.93 Edition : 08.92 Replaces Test oil : ISO-4113 Phasing : 0-45-90-135-180-225-Combination no. : 0 402 648 931 270-315 Tolerance  $+ - ^{\circ} > : 0.50 (0.75)$ Injection pump Pump designation: PE8P120A320LS7847 Time to cyl. no. : 8 EP type number : 0 412 628 863 BASIC SETTING Governor Governor design. : RQ300/950PA1032-1 : 0 421 801 646 1st speed rpm: 550 Governer no. Rack travel in mm : 13.50...13.60 Customer-spec. information Customer : MERCEDES-BENZ Del.quantity cm3/: 23.6...23.8 : 0M402 LA Engine 100 s: (23.3...24.1) 1st version kW : 280.0 cm3 : 0.6 Rated speed >: 1900 Spread > 100 s: (0.9) TEST BENCH REQUIREMENTS rpm : 300.0 Test oil 2nd speed inlet temp. °C> : 38...42 Rack travel in mm: 5.2...5.8 Del.quantity cm3/: 1.0...1.6 100 s: (0.7...1.9) Overflow valve > : 1 417 413 025 cm3 : 0.8 Spread 100 s: (1.0) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder : 1 688 901 105 Degree: -2 assembly> rpm : 600 Rack travel in mm : 19.20...20.80 Opening pressure, bar> : 207...210 FULL LOAD DELIV. AT FULL LOAD STOP Orifice plate diameter mm> : 0,8 1st version Speed rpm : 550 Aneroid pressure h: 1200 Del.quantity Test lines : 1 680 750 075 : 236.0...238.0 1000 : (233.0...241.0) Outside diameter Spread cm3 : 6.00 1000 : (9.00) x Wall>thickness : 8.00x2.50x1000 x Length mm> RATED SPEED (A) Injection pump setting values 1st version > Insp. values in parentheses > Set equal delivery quant. Setting point: > per values \_\_\_ : 600 Speed rpm Rack travel in mm : 20.0 BEGINNING OF DELIVERY Test pressure, bar: 25...27

Testina:

1st rack travel in: 12.10 rpm : 990...1006 Speed 2nd rack travel in: 4.00 rpm : 1065...1095 Speed 4th rack travel in: 1350 rpm : 0.00...1.50Speed LOW IDLE 1 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 5.5 Testing: Speed rpm : 200 Minimum rack trave: 8.00 rpm : 300 Speed Rack travel in mm : 5.40...5.60 Rack travel in mm : 2.00 Speed rpm : 360...400CONSTANT REGULATION rpm : 300...450 Speed TORQUE CONTROL Dimension a mm : 0.55 Torque control curve - 1st version 1st speed rpm : 550 Rack travel in m: 13.50...13.60 2nd speed rpm : 950 Rack travel in m: 13.00...13.20 3rd speed rpm : 800 Rack travel in m: 13.50...13.60 4th speed rpm : 875 Rack travel in m: 13.25...13.45 Aneroid/Altitude Compensator Test 1st version Settina : 400 Speed rpm hPa : 1200 Pressure : 13.50...13.60 Rack travel mm Measurement 1/min: 400 Speed 1st pressure hPa : 650 Rack travel in m: 12.90...13.00 2nd pressure hPa : 300 Rack travel in m: 11.35...11.55 3rd pressure hPa : -Rack travel in m: 10.45...10.75 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS

1st version Aneroid pressure h: 1200 Speed rpm : 950 Del.quantity cm3/ : 214.0...218.0 1000 s: (211.0...221.0) Spread cm3 : 8.00 1000 s: (12.0) > Aneroid pressure h: 650 rpm : 400 Speed Del.quantity cm3/: 196.5...199.5 1000 s: (193.5...202.5) > Aneroid pressure h: rpm : 500 Speed Del.quantity cm3/: 134.0...136.0 1000 s: (131.0...139.0) Spread cm3 : 8.00 1000 s: (12.0) >

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 12.10 rpm : 990...1006 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/: 45.0...65.0 1000 s: (41.0...69.0) Rack travel in mm : 10.50...10.70

Remarks:

**B12** 

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
Edition : 4.9.96
Replaces : 6.94
Test oil : ISO-4113

Combination no. : 0 402 648 955

Injection pump

Pump designation : PE8P12OA32OLS7859 EP type number : 0 412 628 869

Governor

Governor design. : RQ300/950PA1031-9 Governor no. : 0 421 801 675

Customer-spec. information

Customer : MERCEDES-BENZ

Engine : OM442LA

1st version kW : 320.0 Rated speed >: 1900

TEST BENCH REQUIREMENTS

Test oil

inlet temp. \*C> : 38...42

Overflow valve

> : 1 417 413 025

Inlet press., bar: 1.50

Test nozzle holder

assembly> : 1 688 901 105

Opening

pressure, bar> : 207...210

Orifice plate

diameter mm> : 0,8

Test Lines : 1 680 750 075

Outside diameter x Wall>thickness

x Length mm> : 8.00x1.50x1000

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30 : (5.15...5.35)

Rack travel in mm : 20.00...21.00 Firing order : 8-7-2-6-3-5-4-

1

Phasing : 0-45-90-135-180-225-

270-315

Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ 

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 550

Rack travel in mm : 13.70...13.80

Del.quantity cm3/: 24.4...24.6

> 100 s: (23.7...24.9)

Spread cm3 : 0.6

> 100 s: (0.9)

2nd speed rpm : 300

Rack travel in mm : 4.9...5.5 Del.quantity cm3/ : 1.6...2.2 > 100 s: (1.3...2.5)

Spread cm3: 0.6

> 100 s: (1.0)

GUIDE SLEEVE POSITION Control-lever position

Degree: 94...102

Speed rpm: 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 550 Aneroid pressure h: 1000

Del.quantity : 244.0...246.0 > 1000 : (241.0...249.0)

Spread cm3 : 6.00 > 1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600 Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.75 rpm : 990...1006 Speed 2nd rack travel in: 4.00 rpm : 1065...1095 Speed 4th rack travel in: 1200 Speed rpm : 0.00...1.50LOW IDLE 1 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 5.2 Testing: Speed rpm : 200 Minimum rack trave: 7.50 rpm : 300 Speed Rack travel in mm : 5.10...5.30 Rack travel in mm : 2.00 Speed man : 360...400 Aneroid/Altitude Compensator Test 1st version Setting Speed rom : 400 hPa : 1000 Pressure Rack travel mm : 13.70...13.80 Measurement 1/min: 400 Speed 1st pressure hPa : 550 Rack travel in m: 13.00...13.20 2nd pressure hPa : 250 Rack travel in m: 10.90...11.10 3rd pressure hPa : -Rack travel in m: 9.55...9.85 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 : 950 Speed rpm Del.quantity cm3/: 233.0...237.0 1000 s: (232.0...242.0) > Spread cm3 : 8.001000 s: (12.0) Aneroid pressure h: 550 Speed rpm : 400 Del.quantity cm3/: 208.5...211.5 1000 s: (205.5...214.5) > cm3 : -Spread 1000 s: (-) > Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/ : 134.0...136.0 1000 s: (131.0...139.0) Spread cm3 : 8.00 > 1000 s: (12.0)

## **BREAKAWAY**

1st version

imm rack travel less than

tull load rack tr: 12.75

Speed rpm: 990...1006

STARTING FUEL DELIVERY

Remarks:

**B14** 

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : UNI 9,5 i 1 Test sheet Edition : 01.03.93 Replaces : 21.1.93 Test oil : ISO-4113 Combination no. : 0 402 746 902 Injection pump Pump designation : PES6P120A720RS7224 EP type number : 0 412 726 840 Governor Governor design. : RQV275...1100PA975-1 : 0 421 815 267 Governer no. Customer-spec. information : IVECO-UNIC Customer : 8460.41.320 Engine TEST BENCH REQUIREMENTS Test oil inlet temp. \*C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 105 assembly> Opening. : 207...210 pressure, bar> Orifice plate diameter mm> : 0,8 Test lines : 1 680 750 008 Outside diameter x Wall>thickness : 6.00x2.00x600 x Length mm> (A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant. > per values \_\_\_\_ BEGINNING OF DELIVERY Test pressure, bar: 25...27

: 5.10...5.20

: (5.05...5.25)

Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasina : 0-60-120-180-240-300 Tolerance  $+ - ^{\circ} > : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm : 1100 Rack travel in mm : 11.20...11.30 Del.quantity cm3/: 20.9...21.1 100 s: (20.6...21.4) Spread cm3 : 0.5> 100 s: (0.9) rpm : 275.0 2nd speed Rack travel in mm : 5.1...5.5 Del.quantity cm3/: 3.2...3.8 100 s: (2.9...4.1) Spread cm3 : 0.8100 s: (1.2) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 1145 : 10.30...10.50 travel mm rpm : 275 2nd speed : 1.30...1.50 travel mm rpm : 450 3ind speed : 3.40...4.00 travel mm rpm : 750 4th speed : 5.90...6.30 travel mm rpm : 1350 5th speed : 13.00...14.00 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1140 Speed Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1100 Aneroid pressure h: 1200 : 209.0...211.0 Del.quantity

1000 : (206.0...214.0)

>

Prestroke mm

Spread cm3 : 5.00 > 1000 : (9.00) RATED SPEED 1st version Control lever position> degrees: 115...123 Testing: 1st rack travel in: 10.20 rpm : 1140...1150 Speed 2nd rack travel in: 4.00 rpm : 1200...1230 Speed 4th rack travel in: 1350 rpm : 0.00...1.00 Speed LOW IDLE 1 Control lever position degrees: 64...72 Testing: Speed rpm : 100 Minimum rack trave: 6.80 : 275 Speed rpm Rack travel in mm : 5.20...5.40 CONSTANT REGULATION rpm : 270...400 Speed TORQUE CONTROL Dimension a mm : ? Torque control curve - 1st version rpm : 1100 1st speed Rack travel in m: 11.20...11.30 : 700 2nd speed rpm Rack travel in m: 9.90...10.10 3rd speed rpm : 900 Rack travel in m: 10.70...10.90 4th speed rpm : 400 Rack travel in m: 9.30...9.70 Aneroid/Altitude Compensator Test 1st version Setting : 1100 Speed rpm Pressure hPa : 1200 Rack travel mm : 11.20...11.30 Measurement 1/min : 1100 Speed 1st pressure hPa : -Rack travel in m: 7.70...7.90

Rack travel in m: 9.10...9.50 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 Speed rpm : 700 Del.quantity cm3/: 188.0...194.0 1000 s: (185.0...197.0) Aneroid pressure h: rpm : 500 Speed Del.quantity cm3/: 120.0...122.0 1000 s: (117.0...125.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 10.20 rpm : 1140...1150 Speed STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 150.0...180.0 1000 s: (146.0...184.0) LOW IDLE Speed rpm : 275 Rack travel in mm : 5.10...5.50 Del.quantity cm3/: 32.0...38.0 > 1000 s: (29.0...41.0) cm3 : 8.00 Spread 1000 s: (12.00) Remarks:

Setting and blocking of pointer of start-of-delivery sensor on cyl. 1 start of delivery

2nd pressure hPa : 600

3rd pressure hPa : 420

Rack travel in m: 10.60...10.70

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : UNI : 16.11.93 Edition Replaces : 18.12.92 : ISO-4113 Test oil : 0 402 746 937 Combination no. Injection pump Pump designation : PES6P120A720RS7268 EP type number : 0 412 726 884 Governor Governor design. : RQ275/1100PA915-2 Governer no. : 0 421 801 671 Customer-spec. information : IVECO-UNIC Customer Engine : 8460,41,603 TEST BENCH REQUIREMENTS Test oil inlet temp. °C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder assembly> : 1 688 901 105 pressure, bar> : 207...210 diameter mm> : 0,8 : 1 680 750 089 : 8.00x1.50x600 > Insp. values in parentheses > Set equal delivery quant. > per values \_\_\_\_

Opening Orifice plate Test lines Outside diameter x Wall>thickness x Length mm> (A) Injection pump setting values BEGINNING OF DELIVERY Test pressure, bar: 25...27 : 5.10...5.20 Prestroke mm : (5.05...5.25) Rack travel in mm : 9.00...12.00 **B17** 

Firing order : 1-5-3-6-2-4 : 0-60-120-180-240-300 Phasing Tolerance  $+ - ^{\circ} > : 0.30 (0.75)$ Time to cyl. no. : 1 BASIC SETTING rpm: 1100 1st speed Rack travel in mm : 11.90...12.00 Del.guantity cm3/: 19.5...19.7 100 s: (19.2...20.0) cm3 : 0.5Spread 100 s: (0.9) rpm : 275.0 2nd speed Rack travel in mm : 6.2...6.4 Del.quantity cm3/: 2.0...2.6 100 s: (1.7...2.9) cm3 : 0.8 Spread 100 s: (1.2) GUIDE SLEEVE POSITION Control-lever position Degree: -2 Speed rpm : 600 Rack travel in mm : 19.20...20.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1100 Speed Aneroid pressure h: 900 Del.quantity : 195.0...197.0 1000 : (192.0...200.0) > : 5.00 Spread cm3 1000 : (9.00) RATED SPEED 1st version Setting point: rpm : 600 Speed Rack travel in mm: 20.0 Testing: 1st rack travel in: 10.90 rpm : 1145...1160 Speed 2nd rack travel in: 4.00

rpm : 1230...1260

Speed

4th rack travel in: 1350

rpm : 0.00...1.00Speed

LOW IDLE 1

Setting point w/out bumper spring

rpm : 275 Rack travel in mm: 6.3

Testing:

beea rpm : 100

Minimum rack trave: 7.80 rpm : 275

Rack travel in mm : 6.20...6.40

Rack travel in mm : 2.00

Speed rpm : 345...385

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 11.90...12.00

2nd speed rpm : 550

Rack travel in m: 11.80...12.00

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500 hPa : 900 Pressure

Rack travel mm : 11.90...12.00

Measurement

 $1/\min : 500$ Speed

1st pressure hPa : -

Rack travel in m: 8.80...9.00

2nd pressure hPa : 310

Rack travel in m: 10.80...10.90

3rd pressure hPa : 240

Rack travel in m: 9.40...9.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900

Speed rpm : 550 Del.quantity cm3/ : 213.0...219.0

1000 s: (210.0...222.0)

Aneroid pressure h: rpm : 500

Del.quantity cm3/: 111.0...113.0

1000 s: (108.0...116.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.90

rpm : 1145...1160 Speed

STARTING FUEL DELIVERY

rpm : 100 Speed

Del.quantity cm3/: 95.0...120.0

1000 s: (91.0...129.0)

Remarks:

Setting and blocking of pointer of start-of-delivery sensor on cyl. 1 start of delivery

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : NAV : 13.01.94 Edition Replaces : 6.93 Test oil : ISO-4113 Combination no. : 0 402 746 940 Injection pump Pump designation : PES6P120A320LS7284 : 0 412 726 891 EP type number Governor Governor design. : RQV350...1000PA1054K : 0 421 815 337 Governer no. Customer-spec. information Customer : NAV Engine : DTA-531 : 224.0 1st version kW Rated speed >: 2000 Rated speed >: 2000 TEST BENCH REQUIREMENTS Test oil inlet temp. °C> : 38...42 Overflow valve : 1 417 413 076 > Inlet press., bar: 2.80 Test nozzle holder : 1 688 901 101 assembly> Opening : 207...210 pressure, bar> Orifice plate diameter mm> : 0,6 : 1 680 750 008 Test lines Outside diameter x Wall>thickness : 6.00X2.00X600 x Length mm> (A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

Test pressure, bar: 22...24

> per values \_\_\_\_

BEGINNING OF DELIVERY

Prestroke mm : 2.85...2.95 : (2.80...3.00) Rack travel in mm : 14.00...17.00 : 1-5-3-6-2-4 Firing order Phasing : 0-60-120-180-240-300 Tolerance  $+ - ^{\circ}> : 0.50 (0.75)$ BASIC SETTING 1st speed rpm: 1000 Rack travel in mm : 14.30...14.40 Del.quantity cm3/: 21.8...22.0 > 100 s: (21.5...22.3) Spread cm3 : 0.8> 100 s: (1.2) 2nd speed rpm : 325 Rack travel in mm : 6.6...6.8 Del.quantity cm3/ : 2.8...3.4 100 s: (2.6...3.6) cm3 : 0.5 Spread 100 s: (0.9) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 350 : 1.40...1.60 travel mm rpm : 500 2nd speed : 3.70...4.10 travel mm rpm : 800 3rd speed : 6.30...6.70 travel mm rpm : 1000 4th speed travel mm : 8.60...8.80 rpm : 1150 5th speed : 10.50...10.90 travel mm FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1000 Aneroid pressure h: 1500 : 218.0...220.0 Del.quantity 1000 : (215.0...223.0) > cm3 : 8.00 Spread 1000 : (12.0) >

RATED SPEED

1st version FUEL DELIVERY CHARACTERISTICS Control lever position> degrees: 114...126 Testing: 1st version 1st rack travel in: 13.30 Aneroid pressure h: 800 rpm : 1050...1080 rpm : 1500 2nd rack travel in: 4.00 Del.quantity cm3/: 225.5...231.5 Speed rpm : 1170...1180 1000 s: (222.5...234.5) 4th rack travel in: 1250 Spread cm3 : 8.00 rpm : 0.00...1.00 Speed > 1000 s: (12.0) Aneroid pressure h: rpm : 800 LOW IDLE 1 Speed Del.quantity cm3/: 88.0...92.0 > 1000 s: (86.0...94.0) Control lever position degrees: 70...82 Testing: Speed **BREAKAWAY** rpm Minimum rack trave: 7.20 1st version Speed rpm : 325 Rack travel in mm : 6.60...6.80 1mm rack travel less than CONSTANT REGULATION full load rack tr: 13.30 rpm : 330...520 : 1050...1080 Speed Speed rpm TORQUE CONTROL STARTING FUEL DELIVERY Dimension a mm : ? Torque control curve - 1st version rpm : 1000 1st speed Speed rpm : 100 Del.quantity cm3/: 125.0...165.0 Rack travel in m: 14.3...14.4 2nd speed rpm : 650 1000 s: (115.0...175.0) Rack travel in m: 14.2...14.4 3rd speed rpm : 500 LOW IDLE Rack travel in m: 13.3...13.7 4th speed rpm : 800 rpm : 325 Speed Rack travel in mm : 6.60...6.80 Rack travel in m: 14.2...14.4 Del.quantity cm3/: 28.0...34.0 > 1000 s: (26.0...36.0) Aneroid/Altitude cm3 : 8.00 Compensator Test Spread 1000 s: (12.00) 1st version Remarks: Setting : NAVISTAR #1819915c91 Speed : 1000 rom Pressure hPa : 1500 Setting and blocking of pointer of Rack travel mm : 14.30...14.40 start-of-delivery sensor on cyl. 1 start of delivery Measurement Speed 1/min: 1000 Bow dimension: Sliding-sleeve position = 37.0 mm Delivery-valve spring pre-tension = 1st pressure hPa : -6.30...6.40 mm. Rack travel in m: 9.20...9.60 2nd pressure hPa : 395 Permissible alteration from 6.00...6.70 Rack travel in m: 10.70...10.80 3rd pressure hPa : 1010 Rack travel in m: 13.0...13.4 START CUT-OUT

Speed

1/min: 265 (275)

Start-of-delivery blocking 8,75° after start of delivery of cylinder no. 1.

Starting/full-load transition speed from holding magnet = 450 1/min.

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : 14.08.96 Edition Calibrating oil : ISO-4113 : VE4/11F2250R676-2 Injection pump Type number : 0 460 414 135 Customer Part-No. : Customer-specific information Customer : VOLVO PENTA : TAMD22 Engine Speed 1/min: 74 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Electronically> Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 027 assembly> Opening bar: 204.00...210.00 Pressure> Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length> Start of delivery Prestroke mm: -(from BDC): -Start of delivery block Piston stroke mm: 1,1

mm: +-0.02

: A

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1200 Charge press. hPa: 1200 Setting value mm: 2.20...2.60 Supply-pump pressure 1/min: 1200 Speed Charge press hPa: 1200 Setting value bar: 6.30...6.80 Full-load del. with charge press.: 1/min: 1600 Charge press. hPa: 1200 Del. quantity cm3/ 1000s.: 57.0...58.0 Dispersion cm3/: 2.5 1000s.: (3.5) Full-load del. w/out charge press.: Speed 1/min: 800 Del. quantity cm3/ 1000s.: 31.5...32.5 Low-idle speed regulation 1/min: 425 Del. quantity cm3/ 1000s.: 9.0...11.0 Del. quantity cm3/: 3.0 1000s.: (3.0) Full-load speed regulation 1/min: 2330 Charge press hPa: 1200 Del. quantity cm3/ 1000s.: 47.0...53.0 Start: Speed 1/min: 100 Del. quantity cm3/: 50.00...110.00 1000s.: 50.00 Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1250 Charge press hPa: -Inj.-qty. cm3/ difference> 1000s.: - 7,0...9,0 \* SP press.-dif.measurement 1st speed 1/min: 1250 Charge press hPa: -Supply pump pressure>

Speed

>

Outlet >

bar: -0.1...0.3 \*difference> Del. quantity cm3/: 0,0...30,0 1000s.: -1/min: 2330 Inspection-pump test specifications 4th speed Test specifications in parentheses Charge press. hPa: 1200 Del. quantity cm3/: 47.0...53.0 > 1000s.: (44.0...56.0) 5th speed 1/min: 2250 Timing-device characteristic: Charge press. hPa: 1200 1/min: 1000 1st speed Del. quantity cm3/: 58.0...62.0 > 1000s.: (57.0...63.0) hPa: 1200 Charge press mm: 0.9...1.7 TD travel mm: (0.7...1.9) 6th speed 1/min: 1600 Charge press. hPa: 1200
Del. quantity cm3/: 57.0...58.0
> 1000s.: (56.2...58.8)
7th speed 1/min: 800 2nd speed 1/min: 1900 1/min: 1900 hPa: 1200 mm: 5.5...6.3 mm: (5.3...6.5) 1/min: 1200 hPa: 1200 mm: 2.2...2.6 Charge press TD travel > 3rd speed Charge press. hPa: -Del. quantity cm3/: 31.5...32.5 Charge press 1000s.: (29.7...34.3) TD travel mm: (1.8...3.0) Supply-pumb pressure characteristic: Mech. shutoff: 1/min: 750 1st speed 1st speed 1/min: 2250 Charge press. hPa: 1200
Del. quantity cm3/: 0.00...3.00
> 1000s.: -Charge press. hPa: 1200 Supply-pump bar: 5.8...6.4 pressure> 1/min: 1200 2nd speed Charge press. hPa: 1200 Electr. shutoff: Supply-pump bar: 6.3...6.9 1st speed 1/min: 425 pressure> 3rd speed 1/min: 2250 Charge press. hPa: -Charge press. hPa: 1200 Del. quantity cm3/: 0.00...3.00 1000s.: -Supply-pump pressure> bar: 8.6...9.2 Idle delivery: Overflow quantity at overflow valve 1st speed 1/min: 425 1/min: 550 Del. quantity cm3/: 9.0...11.0 1st speed Charge press. hPa: -1000s.: (6.0...14.0) cm3/: 3.0: 55.60...100.00 Dispersion Overflow quantity> cm3/10s: (40.60...115.00) 1000s.: (3.0) 1/min: 475 2nd speed 1/min: 2250 2nd speed Del. quantity cm3/: 1.5...6.5 Charge press. hPa: -1000s.: (0.0...8.0) Overflow : 83.40...166.80 1/min: 580 quantity> cm3/10s: (68.40...181.80) 3rd speed Del. quantity cm3/: 0.0...3.0 > 1000s.: -Delivery-quant. and breakaway char.: Load-dependent start of delivery: 1/min: 750 Inj.-qty.dif.measurement: 1st speed Charge-air pressure-setting hPa: 300 point> 1st speed 1/min: 1250 Del. quantity cm3/: 46.0...47.0 > 1000s.: (44.5...48.5) Charge press. hPa: -Inj.-qty. cm3/ : - 9,0..15.0 # difference> 1000S.: (-0.8..16.0) # 1/min: 2550 2nd speed Charge press. hPa: 1200 Del. quantity cm3/: 0.0...3.0 2nd speed 1/min: 1250 Charge press. hPa: cm3/: 4.0...6.0 'Z 1000s.: -Ini.-qty. 1/min: 2440 difference> 1000S.: -3rd speed

Charge press. hPa: 1200

```
TD-travel dif.measurement:
1st speed 1/min: 1250
Charge press. hPa: -
              : -0.8...1.2 #
TD-travel
difference>
                mm: -
2nd speed 1/min: 1250
Charge press. hPa: -
             : -1.3...1.7 'Z
TD-travel
Automatic starting fuel delivery:
            1/min: 170
1st speed
Del. quantity cm3/: 60.0...110.0
            1000s.: -
             1/min: 300
2nd speed
Del. quantity cm3/: 55.0...85.0
            1000s.: -
4th speed 1/min: 100
Del. quantity cm3/: 50.0...110.0
            1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                 : -
Rated voltage
Mounting and assembly dimensions:
Designation
                mm: 3,2...3,4
K
KF
                mm: KOT
                mm: 1,65
mm: 7,0
mm: 23.0...27.0
MS1
LDA stroke
Ya
                mm: 52.0...66.0
Yb
Remarks:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end
Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
Lever on distributor-head end
```

Z = Absolute delivery

Charge press. hPa: 1000 BOSCH-INJ, -PUMP TEST SPECIFICATIONS Setting value mm: 3,40...3.80 Shutoff Note inst. in remarks column electromagnet>Volt: 12 Test sheet : ROVER Supply-pump pressure Edition : 14.08.96 Calibrating oil : ISO-4113 1/min: 1600 Speed Charge press hPa: 1000 Setting value bar: 6.50...7.10 : VE4/11F2000R509-3 Injection pump Type number : 0 460 414 136 Shutoff Customer Part-No. : electromagnet>Volt: 12 Full-load del. with charge press.: Customer-specific information Customer : GEMINI 3 TA 1/min: 1400 1/min: 83 Charge press. hPa: 1000 Speed Del. quantity cm3/ 1000s.: 65,7...66.7 TEST BENCH REQUIREMENTS Shutoff Overflow restricti: 1 463 456 344 electromagnet>Volt: 12 Dispersion cm3/: 3.0 1000s.: (4.0) Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Full-load del. w/out charge press.: Electronically> : -1/min: 500 Speed Inlet press., bar : 0.30...0.40 Del. quantity cm3/ 1000s.: 37.3...38.3 Calibrating nozzle-holder Shutoff : 1 688 901 116 electromagnet>Volt: 12 assembly> Low-idle speed regulation Opening bar: 204.00...210.00 Pressure> 1/min: 350 Speed Perforated-plate Del. quantity cm3/ diameter> mm: 0.5 1000s.: 9.5...13.5 Shutoff electromagnet>Volt: 12 Test inj. tubing : 1 680 750 073 Del. quantity cm3/: 4.0 1000s.: (4.0) Outside diameter : 6.00 x Wall>thickness : 2.00 Full-load speed regulation x Lenath> mm: 450 1/min: 2200 Speed Start of delivery Charge press hPa: 1000 Del. quantity cm3/ Prestroke mm: -1000s.: 50.5...54.5 > (from BDC): -Shutoff Start of delivery block electromagnet>Volt: 12 Piston stroke mm: 1,4 mm: +-0.02Start: : C Outlet > 1/min: 100 Del. quantity cm3/: 90.5...105.5 Injection-pump setting values 1000s.: 90.5 Test specifications in parentheses mind> Shutoff electromagnet>Voit: 12 Timing-device travel Speed 1/min: 1600 Inspection-pump test specifications

**B26** 

Test specifications in parenthese	
	+ point> hPa: 300
Timing-device characteristic:	+ LDA-stroke mm: 6.4
	+ Shutoff
1st speed 1/min: 1400	+ electromagnet>Volt: 12
Charge press hPa: 1000	+ Del. quantity cm3/: 37.338.3
TD travel mm: 1.72.5	+ > 1000s.: (34.641.0)
TD travel mm: 1.72.5 mm: (1.33.0)	2nd speed 1/min: 2600
electromagnet>Volt: 12	Charge press. hPa: 1000
2nd speed 1/min: 1600	+ Shutoff
Charge press hPa: 1000	+ electromagnet Volt: 12
TD travel mm: 3.43.8	+ Del. quantity cm3/: 0.03.0
> mm: (2,84.4)	+ > 1000s.: -
Shutoff	+ 3rd speed 1/min: 2400
electromagnet>Volt: 12	Charge press. hPa: 1000
3rd speed 1/min: 2000	+ Shutoff
Charge press hPa: 1000	electromagnet>Volt: 12
TD travel mm: 6.06.8	Del. quantity cm3/: 11.021.0
> mm: (5.57.3)	+ > 1000s.: (10.022.0)
	+ 4th speed 1/min: 2200
Supply-pump pressure characterist	
	∔   Shutoff
1st speed	<pre>+ electromagnet&gt;Volt: 12</pre>
Charge press. hPa: 1000	Del. quantity cm3/: 50.554.5
Supply-pump	+ > 1000s.: (48.057.0)
pressure> bar: 5.86.4	5th speed 1/min: 2000
•	
Shutoff	+ Charge press. hPa: 1000
electromagnet>Volt: 12	+ Shutoff
2nd speed 1/min: 1600	<pre>+ electromagnet&gt;Volt: 12</pre>
Charge press. hPa: 1000	+ Del. quantity cm3/: 63.567.5
Supply-pump	+ > 1000s.: (62.568.5)
pressure> bar: 6.57.1	+ 6th speed 1/min: 1400
Shutoff	Charge press. hPa: 1000
electromagnet>Volt: 12	+ Shutoff
3rd speed 1/min: 2000	
	+ electromagnet>Volt: 12
Charge press. hPa: 1000	+ Del. quantity cm3/: 65,766.7
Supply-pump	+ > 1000s.: (63.469.0)
pressure> bar: 7.78.3	+ 7th speed 1/min: 900
Shutoff	+ Charge press. hPa: 1000
electromagnet>Volt: 12	+   Shutoff
_	+ electromagnet>Volt: 12
Overflow quantity at overflow val	
over team quality as ever team val	+ > 1000s.: (59.367.3)
1st speed 1/min: 500	+ 8th speed 1/min: 500
	+ Charge press. hPa: -
Charge press. hPa: 1000	
Shutoff	+ Shutoff
electromagnet>Volt: 12	<pre>+ electromagnet&gt;Volt: 12</pre>
Overflow : 55.60100.0	
quantity> cm3/10s: (40.60115.	00) + > 1000s.: (34.641.0)
2nd speed 1/min: 2000	<del> </del>
Charge press. hPa: 1000	$\downarrow$
Shutoff	$\perp$
	T Electr. shutoff:
electromagnet>Volt: 12	
Overflow : 83.40166.8	
quantity> cm3/10s: (68.40181.	
	+ Charge press. hPa: -
Delivery-quant. and breakaway cha-	
•	+ > 1000s.: -
	→ Shutoff
1st speed 1/min: 800	+ electromagnet>volt: -

Idle delivery: 1/min: 350 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.5...13.5 1000s.: (6,5...16.5) cm3/: 4.0 Dispersion 1000s.: (4.0) 1/min: 500 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.0...3.0 1000s.: -Part-load del.at 3rd inj.-aty. stop (EGR set) Spacing mm: 12.0 1/min: 1000 1st speed Charge press. hPa: 1000 Shutotf electromagnet>Volt: 12 Del. quantity cm3/: 38.0...40.0 1000s.: (36.0...42.0) Automatic starting fuel delivery: 1/min: 200 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 95.0...140.0 1000s.: VH ---> VL 1/min: 350 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 30.0...70.0 > 1000s.: VH -> VL 1/min: 100 3rd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 90.5...105.5 1000s.: VH --> VL 1/min: 100 4th speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 37.5...52.5 1000s.: VH --LL Shutoff electromagnet: Cut-in >min voltage : 10.0

Mounting and assembly dimensions: Designation mm: 3,2...3,4 KF mm: 8,2...8,6 MS1 mm: 1,45 LDA stroke mm: 6.4 ALDA stroke mm: GST 76.9 mm: 42.3...46.3 Ya mm: 50.0...61.0 Potentiometer adjustment: Supply voltage pot. > volt: 5.0 Output volt volt: 3.1 pot. > Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Rated voltage : 12.0

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : ROVER Edition : 14.08.96 replaces Calibrating oil : ISO-4113 : VE4/11F2250L619-1 Injection pump : 0 460 414 143 Type number Customer Part-No. : Customer-specific information Customer : ROVER : 2.01 TCIE-M Engine Speed 1/min: 72 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Electronically> Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 116 assembly> Opening bar: 204.00...210.00 Pressure> Perforated-plate mm: 0.5 diameter> Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450 Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 1000

Charge press. hPa: 1500

Setting value mm: 7.2...7.6

Shutoff electromagnet>Volt: 12 Supply-pump pressure Speed 1/min: 1000 Charge press hPa: 1500 Setting value bar: 6.7...7.3 Timing valve Volt: -Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1250 Speed Charge press. hPa: 1500 Del. quantity cm3/ 1000s.: 59.5...60.5 Timing valve Volt: -Shutoff electromagnet>Volt: 12 Dispersion cm3/: 3.01000s.: (4.0) Full-load del. w/out charge press.: 1/min: 700 Speed Del. quantity cm3/ 1000s.: 42.0...43.0 Timing valve Volt: -Shutoff electromagnet>Volt: 12 Low-idle speed regulation Speed 1/min: 375 Del. quantity cm3/ 1000s.: 4.0...8.0 Timing valve Volt: -Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 4.0 1000s.: (4.5) Full-load speed regulation 1/min: 2580 Charge press hPa: 1500 Del. quantity cm3/ 1000s.: 18.0...22.0 Timing valve Volt: -Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Speed Del. quantity cm3/: 87.5..104.5 VL 1000s.: 87.5 mind>

Timing valve Volt: -

Timing valve Volt: -	+
Shutoff	+ Overflow quantity at overflow valve
electromagnet>Volt: 12	†
	+ 1st speed 1/min: 700
Inspection-pump test specifications	+ Charge press. hPa: 1500
Test specifications in parentheses	+ Timing valve Volt: -
	+ Shutoff
Timing-device characteristic:	+ electromagnet>Volt: 12
	+ Overflow : 55.60100.00
1st speed 1/min: 800	+ quantity> cm3/10s: (40.60115.00)
Charge press hPa: 1500	+ 2nd speed 1/min: 2000
TD travel mm: 6.27.0	+ Charge press. hPa: 1500
> mm: (5.77.5)	+ Timing valve Volt: -
Timing valve Volt: -	+ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
2nd speed 1/min: 1000	+ Overflow : 83.40166.80
Charge press hPa: 1500	+ quantity> cm3/10s: (68.40181.80)
TD travel mm: 7.27.6	+
TD travel mm: 7.27.6 > mm: (6.68.2)	+ Delivery-quant. and breakaway char.:
Timing valve Volt: -	+
Shutoff	+
electromagnet>Volt: 12	+ 1st speed 1/min: 700
3rd speed 1/min: 1400	+ Charge-air pressure-setting
Charge press hPa: 1500	+ point> hPa: 500
TD travel mm: 8.39.0	+ LDA-stroke mm: 5.0
> mm: (7.89.6)	+ Timing valve Volt: -
Timing valve Volt: -	+ Shutoff
Shutoff	+ electromagnet>Volt: 12
electromagnet>Volt: 12	+ Del. quantity cm3/: 53,554,5
4th speed 1/min: 2000	+ > 1000s.: (50.857.2)
Charge press hPa: 1500	+ 2nd speed 1/min: 2670
TD travel mm: 0.00.6	+ Charge press. hPa: 1500
> mm: -	+ Timing valve Volt: -
Timing valve Volt: 12	+ Shutoff
Shutoff	+ electromagnet Volt: 12
electromagnet>Volt: 12	+ Del. quantity cm3/: 0.03.0
	+ > 1000s.: -
Supply-pump pressure characteristic:	+ 3rd speed 1/min: 2580
	+ Charge press. hPa: 1500
1st speed 1/min: 800	+ Timing valve Volt: -
Charge press. hPa: 1500	+ Shutoff
Supply-pump	+ electromagnet>Volt: 12
pressure> bar: 6.47.0	+ Del. quantity cm3/: 18.022.0
Timing valve Volt: -	+ > 1000s.: (15.025.0)
Shutoff	+ 4th speed 1/min: 2450
electromagnet>Volt: 12	+ Charge press. hPa: 1500
2nd speed 1/min: 1000	+ Timing valve Volt: -
Charge press. hPa: 1500	+ Shutoff
Supply-pump	+ electromagnet>Volt: 12
pressure> bar: 6.77.3	+ Del. quantity cm3/: 42.050.0
Timing valve Volt: -	+ > 1000s.: (40.052.0)
Shutoff	+ 5th speed 1/min: 2000
electromagnet>Volt: 12	+ Charge press. hPa: 1500
3rd speed 1/min: 1400	+ Timing valve Volt: -
Charge press. hPa: 1500	+ Shutoff
Supply-pump	+ electromagnet>Volt: 12
pressure> bar: 7.27.8	Pel. quantity cm3/: 58.062.0
Timing valve Volt: -	+ > 1000s.: (66.863.2)
Shutoff	+ 6th speed 1/min: 1250
electromagnet>Volt: 12	+ Charge press. hPa: 1500

Timing valve Volt: -	+ Shutoff
Shutoff	+ electromagnet>Volt: 12
electromagnet>Volt: 12	+ Del. quantity cm3/: 15.065.0
Del. quantity cm3/: 59.560.5	+ > 1000s.: VH> VL
> 1000\$.: (67.262.8)	+ _
7th speed 1/min: 1000	+ 3rd speed 1/min: 100
Charge press. hPa: 1500	+ Timing valve Volt: -
Timing valve Volt: -	+ Shutoff
Shutoff	<pre>+ electromagnet&gt;Volt: 12</pre>
electromagnet>Volt: 12	+ Del. quantity cm3/: 88.5104.5
Del. quantity cm3/: 60.565.5	+ > 1000s.: VH> VL
> 1000s.: (59.067.0)	+
8th speed 1/min: 700	+ 4th speed 1/min: 100
Charge press. hPa: -	+ Timing valve Volt: -
Timing valve Volt: -	+ Shutoff
Shutoff	+ electromagnet>Volt: 12
electromagnet>Volt: 12	+ Del. quantity cm3/: 42.557.5
Del. quantity cm3/: 42.043.0	+ > 1000s.: VH —LL
> 1000s.: (39.345.7)	+
	+ Shutoff electromagnet:
	+ Cut-in
Electr. shutoff:	
Electr. Shutoff:	min voltage : 10.0
1st speed 1/min: 375	Rated voltage : 12.0
	Maynting and against dimensions.
Charge press. hPa: - Del. quantity cm3/: 0.003.00	+ Mounting and assembly dimensions:
> 1000s.: -	T ivasianation
Shutoff	+ Designation + K mm: -
electromagnet>volt: -	+ K mm: - + KF mm: -
Timing valve Volt: -	MS mm: -
Timing vacve vocc.	MS1 mm: -
Idle delivery:	SVS max. mm: -
Tate detivery.	+ LDA stroke mm: 5.0
1st speed 1/min: 375	+ Ya mm: 35.839.8
Timing valve Volt: -	Yb mm: 48.157.9
Shutoff	T 10 mm. 40.131.9
	Remarks:
electromagnet>Volt: 12	T Remarks.
Del. quantity cm3/: 4.08.0 > 10008.: (2.010.0)	ː :
	Ya = Distance between VE flange and
Dispersion cm3/: 4.0 > 1000S.: (4.5)	+ speed-control lever in idle
	+ position
	Heasurement point = edge of control
Timing valve Volt: -	Lever on drive end
Shutoff electromagnet>Volt: 12	I tever on arrive ena
	I
Del. quantity cm3/: 0.03.0 > 10008.: -	Yb = Distance between VE flange and
/ 10003.: -	+ speed-control lever in rated speed
Automatic starting fuel delivery:	+ position
Automatic stanting fuet detivery:	+ Measurement point = edge of control
1st speed 1/min: 180	+ lever on distributor-head end
	T cever on discinduor-nead end
Timing valve Volt: -	I
Shutoff	I
electromagnet>Volt: 12 Del. quantity cm3/: 85.0135.0	I
	I
> 1000s.: VH —> VL	I
2nd speed 1/min: 320	I
zna speed = 17min: 320 Timing valve Volt: -	I
Thing valve vote.	1

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : MAX Edition : 28.05.96 replaces Calibrating oil : ISO-4113 : VE4/11F2000R687 Injection pump Type number : 0 460 414 144 Customer Part-No. : Customer-specific information Customer : MAXION : FORD DELTA Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder assembly> : 1 688 901 116 Opening bar: 204.00...210.00 Pressure> Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450 Start of delivery Prestroke mm: -> (from BDC): -Start of delivery block Piston stroke mm: 1.54 Outlet > Injection-pump setting values Test specifications in parentheses

Charge press. hPa: 1200 Setting value mm: 3.10...3.30 Shutoff electromagnet>Volt: 12 Supply-pump pressure Speed 1/min: 1600 Charge press hPa: 1200 Setting value bar: 7.30...7.90 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1150 Speed Charge press. hPa: 1200 Del. quantity cm3/ 1000s.: 66.5...67.5 Shutoff electromagnet>Volt: 12 Dispersion cm3/: 3.0 1000s.: (4.0) Full-load del. w/out charge press.: 1/min: 500 Del. quantity cm3/ 1000s.: 48.5...49.5 Shutoff electromagnet>Volt: 12 Low-idle speed regulation 1/min: 380 Speed Del. quantity cm3/ > 1000s.: 8.5...12.5 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 4.0 1000s.: (5.0) > Full-load speed regulation Speed 1/min: 2150 Charge press hPa: 1200 Del. quantity cm3/ 1000s.: 47.0...51.0 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Del. quantity cm3/: 61.0...111.0 mind> 1000s.: 61.0 Shutoff electromagnet>Volt: 12 Inspection-pump test specifications

C<sub>0</sub>4

Speed

Timing-device travel

1/min: 1600

rest specifications in parentheses	electromagnet>volt: 12
Timing-device characteristic:	<pre>Overflow : 111.10194.80 quantity&gt; cm3/10s: (96.10209.80)</pre>
Timing-device characteristic:	+ quantity> cms/fus: (96.10209.80)
1st speed 1/min: 1300	+ Delivery-quant. and breakaway char.:
Charge press hPa: 1200	+
TD travel mm: 0.801.40	+
> mm: (0.501.70)	+ 1st speed 1/min: 700
electromagnet>Volt: 12	+ Charge-air pressure-setting
2nd speed 1/min: 1600	+ point> hPa: 600
Charge press hPa: 1200	+ Shutoff
TD travel mm: 3.103.30	+ electromagnet>Volt: 12
> mm: (2.703.70)	+ Del. quantity cm3/: 66.067.0
Shutoff	+ > 1000s.: (63.569.5)
electromagnet>Volt: 12	+ 2nd speed 1/min: 2460
3rd speed 1/min: 1900	+ Charge press. hPa: 1200
Charge press hPa: 1200	+ Shutoff
TD travel mm: 4.605.20	+ electromagnet Volt: 12
> mm: (4.30,5,50)	+ Del. quantity cm3/: 0.003.00
Shutoff	+ > 1000s.: -
electromagnet>Volt: 12	+ 3rd speed 1/min: 2300
o coot omagnets voter 12	+ Charge press. hPa: 1200
Supply-pump pressure characteristic:	+ Shutoff
dapely pamp pressure characteristics.	+ electromagnet>Volt: 12
1st speed 1/min: 600	Del. quantity cm3/: 22.032.0
Charge press. hPa: 1200	+ > 1000s.: (21.033.0)
Supply-pump	4th speed 1/min: 2150
pressure> bar: 3.904.50	+ Charge press. hPa: 1200
Shutoff	+ Shutoff
electromagnet>Volt: 12	electromagnet>Volt: 12
2nd speed 1/min: 1300	Del. quantity cm3/: 47.0051.00 + > 1000s.: (44.0054.00)
Charge press. hPa: 1200	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Supply-pump	+ 5th speed 1/min: 1950
pressure> bar: 6.407.00	Charge press. hPa: 1200
Shutoff 12	+ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
3rd speed 1/min: 1600	Del. quantity cm3/: 66.570.5
Charge press. hPa: 1200	+ > 1000s.: (65.571.5)
Supply-pump	+ 6th speed 1/min: 1150
pressure> bar: 7.307.90	Charge press. hPa: 1200
Shutoff	+ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
4th speed 1/min: 1900	Del. quantity cm3/: 66.567.5
Charge press. hPa: 1200	1000s.: (64.569.5)
Supply-pump	+ 7th speed 1/min: 900
pressure> bar: 8.308.90	Charge press. hPa: 1200
Shutoff	Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
•	Del. quantity cm3/: 67.572.5
Overflow quantity at overflow valve	+ > 1000s.: (66.074.0)
	8th speed 1/min: 500
1st speed	+ Charge press. hPa: -
Charge press. hPa: 1200	+ Shutoff
Shutoff	electromagnet>Volt: 12
electromagnet>Volt: 12	Del. quantity cm3/: 48.549.5
Overflow : 88.80133.30	+ > 1000s.: (46.052.0)
quantity> cm3/10s: (73.80148.30)	†
2nd speed 1/min: 1950	+
Charge press. hPa: 1200	†
Shutoff -	+ Electr. shutoff:

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1/min: 350 1st speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 380 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.5...12.5 1000s.: (5.5...15.5) cm3/: 4.0 Dispersion 1000s.: (5.0) 1/min: 340 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 22.5...30.5 1000s.: (19.5...33.5) 3rd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 350 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 34.00...74.00 1000s.: -2nd speed 1/min: 250 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 30.00...80.00 1000s.: -Shutoff electromagnet: Cut-in : 10.0 >min voltage Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 2.7...2.9 K mm: KOT KF mm: 1.3...1.6 mm: 39.0...43.0 MS1 Ya mm: 56.5...66.5 Yb Remarks: Ya = Distance between VE flange and

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speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR Edition : 14.08.96

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/11F2000R624-5 Type number : 0 460 414 151

Customer Part-No. :

Customer-specific information

Customer : FORD

Engine : 2.5L DI SWISS

Speed 1/min: 51

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 114

Opening

Pressure> bar: 204.00...210.00

Perforated-plate

diameter> mm: 0,4

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery block Piston stroke mm: 0,52

> mm: +-0,02(0,06)

Outlet > : B

Injection-pump setting values Test specifications in parentheses Timing-device travel

Speed 1/min: 1250

Setting value mm: 2,60...2,80

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 7,10...7.70

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

> 1000s.: 28,3...28,7 F

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 425

Del. quantity cm3/

> 1000s.: 9,50...11,50

Shutoff

Full-load speed regulation

Speed 1/min: 2200

Del. quantity cm3/

> 1000s.: 25.00...27,00

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 1000s.: (4.0)

Start:

Speed 1/min: 100

Del. quantity cm3/: 25.00...65.00

mind> 1000s.: 25.00

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000

TD travel mm: 1,1...1,9 mm: (0,6...2,4)

electromagnet>Volt: 12 2nd speed 1/min: 1250

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TD travel mm:	2,602.80	+	Shutoff	
	(2,103,30)	+	electromagnet>Volt:	: 12
Shutoff		+	Del. quantity cm3/:	25.027.0
electromagnet>Volt:	12	+		(21,031,0)
3rd speed 1/min:		+	5th speed 1/min:	1950
TD travel mm:	6,006,80	+	Shutoff	
	(5,507,30)	+	electromagnet>Volt:	: 12
Shutoff		+	Del. quantity cm3/:	
electromagnet>Volt:	12	1	> 1000s.:	(39.544.0)
<b>3</b>	· <del>-</del>	1	6th speed 1/min:	
Supply-pump pressur	e characteristic:	1	Shutoff	
and to the same for a contract		1	electromagnet>Volt:	12
1st speed 1/min:	500	1	Del. quantity cm3/:	
Supply-pump	366	1		(38.543.5)
	5.406,00	1	7th speed 1/min:	
Shutoff	3.400,00	T	Shutoff	1130
electromagnet>Volt:	12	I		10
2nd speed 1/min:		T	<pre>electromagnet&gt;Volt: Del. quantity cm3/:</pre>	
	1100	T		(33.538.5) E
Supply-pump	4 00 7 50	T		
	6.907.50	†	8th speed 1/min:	300
Shutoff	45	†	Shutoff	40
electromagnet>Volt:		†	electromagnet>Volt:	
3rd speed 1/min:	1250	+	Del. quantity cm3/:	28.328.7
Subbra-bawb	7.40 7.70	+	> 1000s.:	(25.531.5)
•	7.107.70	†		
Shutoff		+		
electromagnet>Volt:	12	+		
4th speed 1/min:	2000	+	Electr. shutoff:	
Supply-pump		+		
pressure> bar:	8.709.30	+	1st speed 1/min:	
Shutoff		+	Del. quantity cm3/:	
electromagnet>Volt:	12	+	> 1000s.:	(0.003.00)
		+	Shutoff	
Overflow quantity a	t overflow valve	+	electromagnet>volt:	_
•		+	_	
1st speed 1/min:	500	+	Idle delivery:	
Shutoff		+	•	
electromagnet>Volt:	12	+	1st speed 1/min:	425
	97.30141.70	1	Shutoff	
quantity> cm3/10s:		+	electromagnet>Volt:	12
2nd speed 1/min:		1	Del. quantity cm3/:	9.511.5
Shutoff		1	> 1000s.:	(6.514.5)
electromagnet>Volt:	12	1	Dispersion cm3/:	
	115.30184.80	1	> 1000s.:	
quantity> cm3/10s:		1	2nd speed 1/min:	
quarterey chorios.	(100.501//.00/	1	Shutoff	366
Delivery-quant. and	breakayay chan :	Ι	electromagnet>Volt:	12
becivery quant. and	Dieakaway Char	Ι	Del. quantity cm3/:	
		Ţ		(0.006.00)
2nd speed 1/min:	2/.00	Ι	7 10003	(0.000.00)
•	2400	T	Pant-land dal at In	d ini _atv
Shutoff	12	T	Part-load del.at 3r	u mjqty.
electromagnet Volt:		Ť	-t (FCDt)	
Del. quantity cm3/:		Ť	stop (EGR set)	
> 1000s.:		Ť		
3rd speed 1/min:	2300	†	Succion -	20.0
Shutoff		†	Spacing mm:	20,0
electromagnet>Volt:		†	4	4250
Del. quantity cm3/:	9.015.0	†	1st speed 1/min:	1250
	(6.018.0)	†	Shutoff	40
4th speed 1/min.	2200	4	electromagnet>Volt.	12

```
Del. quantity cm3/: 22.0...23.0
             1000s.: (20,0...25.0)
Automatic starting fuel delivery:
1st speed
              1/min: 300
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 33.0...63.0
> 1000s.: -
              1/min: 480
2nd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 20.0...32.0
             1000s.: -
              1/min: 100
4th speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 25.0...65.0
             1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                    : 10,0
Rated voltage
                    : 12,0
Mounting and assembly dimensions:
Designation
                 mm: 2.7...2.9
K
KF
                 mm: 8,2...8,6
                 mm: 1,6,,,2,0
MS
HBA stroke
                 mm: 7,2
Ya
                 mm: 41.0...44.0
                 mm: 63.0...75.0
Yb
Remarks:
F = Adjustment point for low full-load
delivery
E = Fuel-delivery adjustment point in
HBA range. (Correction by way of HBA
adjusting screw).
D = Adjustment point for high full-
load delivery
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BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR

Edition : 14.08.96

replaces

Calibrating oil : ISO-4113

: VE4/11F2000R624-6 Injection pump

Type number : 0 460 414 152

Customer Part-No. :

Customer-specific information

Customer : FORD

: 2.51 DI Engine

Speed 1/min: 56

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 114 assembly>

Opening

bar: 204.00...210.00 Pressure>

Perforated-plate

diameter> mm: 0,4

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00

x Wall>thickness : 2.00 mm: 450 x Length>

Start of delivery

Prestroke mm: -

> (from BDC): -

Start of delivery block

Piston stroke mm: 0,52 mm: +-0.02(0.06)

Outlet >

Injection-pump setting values

Test specifications in parentheses

Timing-device travel

1/min: 1250 Speed

Setting value mm: 2,60...2,80

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1250

Setting value bar: 6.90...7.50

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

1000s.: 25,3...25,7 F

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

1/min: 425 Speed

Del. quantity cm3/

> 1000s.: 8.0...10.0

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.0

1000s.: (4.0)

Full-load speed regulation

1/min: 2200 Speed

Del. quantity cm3/

1000s.: 22.00...24,00 >

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0

1000s.: (4.0)

Start:

Speed 1/min: 100 Del. quantity cm3/: 25.00...65.00

1000s.: 25.00 mind>

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000

mm: 1,3...2.1 TD travel

mm: (0,8...2,6)

electromagnet>Volt: 12

2nd speed 1/min: 1250

TD travel mm:	2,602.80	+ Shutoff
	(2,103,30)	+ electromagnet>Volt: 12
Shutoff	,,,	+ Del. quantity cm3/: 26.532.5
electromagnet>Volt:	12	+ > 1000s.: (23.535,5)
3rd speed 1/min:	5000	+ 5th speed 1/min: 1950
	5.105.90	+ Shutoff
	(4.606.40)	•
	(4.606.40)	electromagnet>Volt: 12
Shutoff	40	+ Del. quantity cm3/: 35,838,2 D
electromagnet>Volt:	12	+ > 1000s.: (34.539.5) D
		+ 6th speed 1/min: 1700
Supply-pump pressur	e characteristic:	+ Shutoff
		+ electromagnet>Volt: 12
1st speed 1/min:	500	+ Del. quantity cm3/: 36.839.2
Supply-pump		+ > 1000s.: (35.540.5)
	5.205.80	+ 7th speed 1/min: 1000
Shutoff		+ Shutoff
electromagnet>Volt:	12	+ electromagnet>Volt: 12
2nd speed 1/min:		+ Del. quantity cm3/: 33.534.5 E
Supply-pump	1000	+ > 1000s.: (31.536.5) E
pressure> bar:	6.407.00	+ 8th speed 1/min: 500
Shutoff	0.407.00	+ Shutoff
	10	
electromagnet>Volt:	1250	electromagnet>Volt: 12
3rd speed 1/min:	1250	Del. quantity cm3/: 25.325.7
Supply-pump		+ > 1000s.: (22.528.5)
	6.907.50	+
Shutoff		+
electromagnet>Volt:		+
4th speed 1/min:	2000	+ Electr. shutoff:
Supply-pump		+
pressure> bar:	8.609.20	1st speed 1/min: 425
Shutoff		+ Del. quantity cm3/: 0.003.00
electromagnet>Volt:	12	+ > 1000s.: (0.003.00)
		+ Shutoff
Overflow quantity as	r overflow valve	+ electromagnet>volt: -
over team quarterly a	c over real valve	1
1st speed 1/min:	500	Idle delivery:
Shutoff	J00	I late decivery.
	10	1st speed 1/min: 425
electromagnet>Volt:		
Overflow :	97.30141.70	+ Shutoff
quantity> cm3/10s:	(82.30!56.70)	+ electromagnet>Volt: 12
2nd speed 1/min:	1950	+ Del. quantity cm3/: 8.010.0
Shutoff	40	+ > 1000s.: (5.013.0)
electromagnet>Volt:	12	+ Dispersion cm3/: 3.0
Overflow :		+ > 1000s.: (4.0)
quantity> cm3/10s:	(100.30199.80)	+ 2nd speed 1/min: 500
		+ Shutoff
Delivery-quant. and	breakaway char.:	<pre>+ electromagnet&gt;Volt: 12</pre>
• •		+ Del. quantity cm3/: 0.006.00
		+ > 1000s.: (0.006.00)
2nd speed 1/min:	2400	1
Shutoff	·	Part-load del.at 3rd injqty.
electromagnet Volt:	12	1
Del. quantity cm3/:		stop (EGR set)
> 1000S.:		1 2000 (201, 200)
		$oldsymbol{\perp}$
•		Spacing mm: 20,0
Shutoff	12	+ Spacing mm: 20,0
electromagnet>Volt:	22 0 27 0	1-t anged 1/min. 1250
Del. quantity cm3/:	(10.0 20.0)	1st speed 1/min: 1250
	(18.028.0)	Shutoff
4th speed 1/min:	214U -	electromagnet>Volt: 12

```
Del. quantity cm3/: 20.8...21.8
             1000s.: (18.8...23.8)
Automatic starting fuel delivery:
              1/min: 300
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 33.0...63.0
             1000s.: -
2nd speed
              1/min: 480
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 20.0...32.0
             1000s.: -
              1/min: 100
4th speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 25.0...65.0
             1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                   : 10,0
Rated voltage
                   : 12,0
Mounting and assembly dimensions:
Designation
                 mm: 2.7...2.9
K
KF
                 mm: 8,2...8,6
                 mm: 1,6,,,2,0
mm: 7,7
mm: 41.0...44.0
MS
HBA stroke
Ya
Yb
                 mm: 63.0...75.0
Remarks:
F = Adjustment point for low full-load
delivery
E = Fuel-delivery adjustment point in
HBA range. (Correction by way of HBA
adjusting screw).
D = Adjustment point for high full-
load delivery
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition : 14.08.96 replaces Calibrating oil : ISO-4113 Injection pump : VE4/11F2000R624-7 : 0 460 414 153 Type number Customer Part-No. : Customer-specific information Customer : FORD : 2.51 DI Engine 1/min: 51 Speed TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 114 assembly> Opening bar: 204.00...210.00 Pressure> Perforated-plate mm: 0,4 diameter> Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length>

Start of delivery Prestroke mm: -(from BDC): -Start of delivery block Piston stroke mm: 0,52 mm: +-0.02(0.06)> Outlet > Injection-pump setting values Test specifications in parentheses c13

1/min: 1250 Speed Setting value mm: 2,60...2,80 Shutoff electromagnet>Volt: 12 Supply-pump pressure 1/min: 1250 Speed Setting value bar: 7,10...7.70 Shutoff electromagnet>Volt: 12 Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 28,3...28,7 F Shutoff electromagnet>Volt: 12 Low-idle speed regulation 1/min: 425 Del. quantity cm3/ 1000s.: 9,50...11,50 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 3.0 1000s.: (5.0) Full-load speed regulation Speed 1/min: 2200 Del. quantity cm3/ 1000s.: 25.00...27,00 Shutoff electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 1000s.: (4.0) Start: Speed 1/min: 100 Del. quantity cm3/: 25.00...65.00 mind> 1000s.: 25.00 Shutoff electromagnet>Volt: 12 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1st speed 1/min: 1000 mm: 1,1...1,9 TD travel mm: (0,6...2,4)electromagnet>Volt: 12 1/min: 1250 2nd speed

Timing-device travel

TD travel mm:	2,602.80 +	Shutoff	
> mm:	(2,103,30) +	electromagnet>Volt:	12
Shutoff	+	Del. quantity cm3/:	25.027.0
electromagnet>Volt:	12		(21,031,0)
3rd speed 1/min:		5th speed 1/min:	
	6,006,80	Shutoff	.,,50
	(5,507,30)		10
	(3,307,30)	electromagnet>Volt:	16
Shutoff	1,	Del. quantity cm3/:	40.342./ 0
electromagnet>Volt:	12 +		(39.544.0) 0
	·	6th speed 1/min:	1700
Supply-pump pressur	e characteristic: +	Shutoff	
	+	electromagnet>Volt:	12
1st speed 1/min:	500 +	Del. quantity cm3/:	39.842.2
Supply-pump	<del>-</del>		(38.543.5)
	5.406,00	7th speed 1/min:	
Shutoff	1	Shutoff	, , , ,
electromagnet>Volt:	12	electromagnet>Volt:	12
2nd speed 1/min:		Del. quantity cm3/:	
	T 100		
Supply-pump	100 750		(33.538.5) E
	6.907.50	8th speed 1/min:	500
Shutoff	+	Shutoff	
electromagnet>Volt:	12 +	electromagnet>Volt:	
3rd speed 1/min:	1250 +	Del. quantity cm3/:	
Supply-pump	+	> 1000s.:	(25.531.5)
	7.107.70		
Shutoff	1		
electromagnet>Volt:	12		
4th speed 1/min:		Electr. shutoff:	
•	7	Etecti. Shatori.	
Supply-pump	8 70 0 70 T	1st speed 1/min.	/25
•	8.709.30	1st speed 1/min:	
Shutoff	<b>†</b>	Del. quantity cm3/:	
electromagnet>Volt:	12 +		(0.003.00)
	+	Shutoff	
Overflow quantity a	t overflow valve 🗼 🕂	electromagnet>volt:	_
	+		
1st speed 1/min:	500 +	Idle delivery:	
Shutoff	+	•	
electromagnet>Volt:	12	1st speed 1/min:	425
	97.30141.70	Shutoff	
quantity> cm3/10s:		electromagnet>Volt:	12
2nd speed 1/min:		Del. quantity cm3/:	0 5 11 5
	1730	> 1000s.:	(6.514.5)
Shutoff	13 T		
electromagnet>Volt:		Dispersion cm3/:	
	115.30184.80	> 1000s.:	
quantity> cm3/10s:	(100.30199.80) +	2nd speed 1/min:	500
	+	Shutoff	
Delivery-quant. and	breakaway char.:	electromagnet>Volt:	12
	+	Del. quantity cm3/:	0.006.00
	+	> 1000s.:	(0.006.00)
2nd speed 1/min:	2400		
Shutoff		Part-load del.at 3rd	iniatv.
electromagnet Volt:	12	1411 (044 400.40 014	11.7. 407.
		ston (ECP sot)	
Del. quantity cm3/:		stop (EGR set)	
> 1000s.:			
3rd speed 1/min:	2300 +	•	20.0
Shutoff	+	Spacing mm:	20,0
electromagnet>Volt:			
Del. quantity cm3/:	9.015.0	1st speed 1/min:	1250
	(6.018.0)	Shutoff	
4th speed 1/min:		electromagnet>Volt:	12

```
Del. quantity cm3/: 22.0...23.0
             1000s.: (20,0...25.0)
Automatic starting fuel delivery:
              1/min: 300
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 33.0...63.0
             1000s.: -
2nd speed
              1/min: 480
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 20.0...32.0
             1000s.: -
              1/min: 100
4th speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 25.0...65.0
             1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                   : 10,0
Rated voltage
                   : 12,0
Mounting and assembly dimensions:
Designation
K
                 mm: 2.7...2.9
KF
                 mm: 8,2...8,6
MS
                 mm: 1,6,,,2,0
                 mm: 7,2
mm: 41.0...44.0
HBA stroke
Ya
                 mm: 63.0...75.0
Yb
Remarks:
F = Adjustment point for low full-load
delivery
E = Fuel-delivery adjustment point in
HBA range. (Correction by way of HBA
adjusting screw).
D = Adjustment point for high full-
load delivery
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition : 14.08.96

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/11F1800L363-1

Type number : 0 460 416 081

Customer Part-No. :

Customer-specific information

Customer : VM

Engine : 638 BLTK

1/min: 107 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly>

Openina

Pressure> bar: 144.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

mm: 0,3 Prestroke

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Speed Charge press. hPa: 1000 mm: 3.5...3.9 Setting value

Shutoff

electromagnet>Volt: 24

Supply-pump pressure

Speed 1/min: 1500 Charge press hPa: 1000 Setting value bar: 6.6...7.2

Shutoff

electromagnet>Volt: 24

Full-load del. with charge press.:

1/min: 1500 Speed Charge press. hPa: 1000

Del. quantity cm3/

> 1000s.: 58.5...59.5

Shutoff

electromagnet>Volt: 24 cm3/: 3.5 Dispersion 1000s.: (3.5)

Full-load del. w/out charge press.:

1/min: 600 Speed

Del. quantity cm3/

1000s.: 43.5...44.5

Shutoff

electromagnet>Volt: 24

Low-idle speed regulation

1/min: 450 Speed

Del. quantity cm3/

1000s.: 10.0...14.0

Shutoff

electromagnet>Volt: 24 Del. quantity cm3/: 3.5 1000s.: (3.5)

Full-load speed regulation

Speed 1/min: 1950 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 36.0...42.0

Shutoff

electromagnet>Volt: 24

Start:

Speed 1/min: 100 Del. quantity cm3/: 55.0...95.0

mind> 1000s.: 55.0

Shutoff

electromagnet>Volt: 24

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1500 Charge press hPa: -Inj.-qty. cm3/

C16

difference> 1000S.: -4.06.0 * Shutoff electromagnet>Volt: 24 SP pressdif.measurement	<pre>Shutoff     electromagnet&gt;Volt: 24     Overflow</pre>
1st speed 1/min: 1500 Charge press hPa: - Supply pump	Charge press. hPa: 1000  Shutoff electromagnet>Volt: 24
pressure> difference> bar: -0.10.3 *	Overflow : 55.6139.0 quantity> cm3/10s: (40.6154.0)
Inspection-pump test specifications Test specifications in parentheses	Delivery-quant. and breakaway char.
Timing-device characteristic:	1st speed 1/min: 600 Charge-air pressure-setting
1st speed 1/min: 1000	+ point> hPa: 450
·	
	· ·
TD travel mm: 0.61.4	+ Shutoff
> mm: (0.31.7)	+ electromagnet>Volt: 24
electromagnet>Volt: 24	+ Del. quantity cm3/: 49.550.5
2nd speed 1/min: 1500	+ > 1000s.: (47.552.5)
Charge press hPa: 1000	+ 2nd speed 1/min: 2200
TD travel mm: 3.503.90	+ Charge press. hPa: 1000
> mm: (3.004.40)	+ Shutoff
Shutoff	+ electromagnet Volt: 24
electromagnet>Volt: 24	+ Del. quantity cm3/: 0.03.0
3rd speed 1/min: 1800	+ > 1000s.: -
Charge press hPa: 1000	+ 3rd speed 1/min: 2080
TD travel mm: 4.505.30	+ Charge press. hPa: 1000
> mm: (4.205.60)	+ Shutoff
Shutoff	+ electromagnet>Volt: 24
electromagnet>Volt: 24	<pre>Del. quantity cm3/: 0.010.00</pre>
Supply-pump pressure characteristic:	+ 4th speed 1/min: 2000 + Charge press. hPa: 1000
1st speed 1/min: 600	+ Shutoff
Charge press. hPa: 1000	+ electromagnet>Volt: 24.0
Supply-pump	+ Del. quantity cm3/: 18.038.0 + > 1000s.: -
Shutoff	5th speed 1/min: 1950
electromagnet>Volt: 24	Charge press. hPa: 1000
2nd speed 1/min: 1500	+ Shutoff
Charge press. hPa: 1000	+ electromagnet>Volt: 24
Supply-pump	+ Del. quantity cm3/: 36.042.0
pressure> bar: 6.67.2	+ > 1000s.: (35.043.0)
> bar: -	+ 6th speed 1/min: 1800
Shutoff	+ Charge press. hPa: 1000
electromagnet>Volt: 24	+ Shutoff
3rd speed	+ electromagnet>Volt: 24
·	Del. quantity cm3/: 55.057.0
Supply-pump	
pressure> bar: 7.78.3	7th speed 1/min: 1500
Shutoff	+ Charge press. hPa: 1000
electromagnet>Volt: 24	+ Shutoff
	+ electromagnet>Volt: 24
Overflow quantity at overflow valve	Del. quantity cm3/: 58.559.5 1000S.: (57.061.0)
1st speed 1/min: 600	8th speed 1/min: 600
Charge press. hPa: 1000	Charge press. hPa: 1000
CHIEFRE DI COO. HEA. LUUU	i charge press. In a. 1000

Shutoff	- Charge press. hPa: -
electromagnet>Volt: 24	Inj.—qty. cm3/: 2.08.0 ' Z
Not might on 7/2 FF F FO F	
Del. quantity cm3/: 55.559.5	difference> 1000s.: -
> 1000s.: (54.061.0)	- Shutoff
9th speed 1/min: 600	- electromagnet Volt: 24
Charge press. hPa: -	
Shutoff -	TD-travel dif.measurement:
electromagnet>Volt: 24	ib thatte arrangements.
Pal manifest and 17 5 11 5	4
Del. quantity cm3/: 43.544.5	1st speed
> 1000s.: (41.546.5)	- Charge press. hPa: -
+	- TD-travel : -1.51.7 #
4	- difference> mm: -
Mech. shutoff:	- Shutoff
	electromagnet>Volt: 24
1nt mond 1/min, 1900	
1st speed 1/min: 1800	- 2nd speed 1/min: 1500
Charge press. hPa: 1000	- Charge press. hPa: -
Del. quantity cm3/: 0.003.00	TD-travel : -1.11.9 '
> 1000s.: -	- difference> mm: -
Shutoff	  -
electromagnet>volt: 24	Automatic starting fuel delivery:
etectionagnet/vott. 24	Automatic starting rule detivery.
T	r
Electr. shutoff:	- 1st speed 1/min: 300
+	- Shutoff
1st speed	electromagnet>Volt: 24
Charge press. hPa: -	- Del. quantity cm3/: 55.075.0
Del. quantity cm3/: 0.003.00	- > 1000s.: -
> 1000s.: -	7 10000
1	
Shutoff	- 2nd speed 1/min: 400
electromagnet>volt: -	- Shutoff
+	<ul><li>electromagnet&gt;Volt: 24</li></ul>
Idle delivery:	- Del. quantity cm3/: 37.057.0
	- > 1000s.: -
1st speed	-
· · · · · · · · · · · · · · · · · · ·	- - 4th speed
Shutoff	
electromagnet>Volt: 24	- Shutoff
Del. quantity cm3/: 10.014.0	- electromagnet>Volt: 24
> 1000s.: (8.016.0)	- Del. quantity cm3/: 55.095.0
Dispersion cm3/: 3.5	•
> 1000s.: (3.5)	- Shutoff electromagnet:
2nd speed 1/min: 500	-
Shutoff	- Cut-in
electromagnet>Volt: 24	- >min voltage : 20.0
Del. quantity cm3/: 4.59.5	- Rated voltage : 24.0
> 1000s.: (2.511.5) <del> </del>	-
3rd speed 1/min: 650 +	<ul> <li>Mounting and assembly dimensions:</li> </ul>
Shutoff	
electromagnet>Volt: 24	- Designation
Del. quantity cm3/: 0.03.0	
> 1000s.: - +	KF mm: 5.66.0
<del>†</del>	- MS mm: 0.81.2
Load-dependent start of delivery:	- LDA stroke mm: 7.1
<pre>Injqty.dif.measurement:</pre>	Ya mm: 38.640.6
1	Yb mm: 50.652.4
1st speed	
	Pomanto.
Charge press. hPa: -	Remarks:
Injqty. cm3/ : -13,520.5 #	· ;
difference> 1000S.: - +	•
Shutoff +	<ul> <li>Yb = Distance between VE flange and</li> </ul>
electromagnet>Volt: 24	speed-control lever in rated speed
2nd sneed 1/min: 1500	position

Measurement point = edge of control lever on distributor-head end

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Z = Absolute delivery

Note inst. in remarks column

Test sheet : HER Edition : 09.08.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/12F1300R314C Type number : 0 460 424 044

Customer Part-No. :

Customer—specific information Customer : HERCULES

Engine : D2300 NA

Power KW: 55 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 027

Opening |

Pressure> bar: 250.00...253.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

Prestroke mm: 0,3

> (from BDC): +-0.04(0.06)

Indicator setting

Piston stroke> mm: 1,0 Outlet> : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 900

Setting value mm: 1,3...1,7

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 900 Setting value bar: 4,1...4,7

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 900

Del. quantity cm3/

> 1000s.: 64,5...65,5

Shutoff

electromagnet>Volt: 12
Dispersion cm3/: 4,0
> 10008:: (4,5)

Low-idle speed regulation

Speed 1/min: 250

Del. quantity cm3/

> 1000s.: 11,0...13.00

Shutoff

Full-load speed regulation

Speed 1/min: 1350

Del. quantity cm3/

> 1000s.: 49,50...55,50

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.00...110.0

mind> 1000s.: 60.00

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

> mm: (0,3...1,7)

electromagnet>Volt: 12 2nd speed 1/min: 900

TD travel mm: 1,30...1,70 mm: (0,80...2,20)

Shutoff

C20

electromagnet>Volt:		+		(60,0066,00)
3rd speed 1/min:		†	6th speed 1/min:	1100
	2,803,60	+	Shutoff	
	(2,503,90)	+	electromagnet>Volt:	
Shutoff		+	Del. quantity cm3/:	63,066,0
electromagnet>Volt:	12	+	> 1000s.:	(61,068,0)
_		1	7th speed 1/min:	
Supply-pump pressure	e characteristic:	1	Shutoff	
odpbty pamp pressur	e enaraced isere.	1	electromagnet>Volt:	10
1 1/	500	Ţ	Pol guardity on 7/1	4/ 5 45 5
1st speed 1/min:	300	Ť	Del. quantity cm3/:	04,303,3
Supply-pump		†	> 1000s.:	(62,068,0)
pressure> bar:	2,503,10	+	8th speed 1/min:	500
Shutoff		+	Shutoff	
electromagnet>Volt:	12	+	electromagnet>Volt:	12
2nd speed 1/min:		+	Del. quantity cm3/:	
Supply-pump		1	> 1000s.:	
pressure> bar:	4,104,70	1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Shutoff	4, 104, 10	Ţ		
	40	Ť	Marsh - L	
electromagnet>Volt:		†	Mech. shutoff:	
3rd speed 1/min:	1300	+		
Supply-pump		+	1st speed 1/min:	1300
pressure> bar:	5,606,20	+	Del. quantity cm3/:	0,003.00
Shutoff	•	1	Shutoff	•
electromagnet>Volt:	12	1	electromagnet>volt:	12
ctcottomagnet votet	12	1	cecer omagnees vocat	
0.,	+ overelev velve	Ŧ	Floots objects	
Overflow quantity as	t overflow valve	Ť	Electr. shutoff:	
		+		
1st speed 1/min:	500	+	1st speed 1/min:	
Shutoff		+	Del. quantity cm3/:	0.003.00
electromagnet>Volt:	12	+	> 1000s.:	(0.003.00)
Overflow :	41.7083 40	1	Shutoff	
quantity> cm3/10s:		1	electromagnet>volt:	_
		T	etetti ollagnetz vott.	
2nd speed 1/min:	1300	Ť	7 (1 - 1-1 *	
Shutoff		+	Idle delivery:	
electromagnet>Volt:	12	+		
	55.60139.00	+	1st speed 1/min:	250
quantity> cm3/10s:	(40.60154.00)	+	Shutoff	
•		+	electromagnet>Volt:	12
Delivery-quant. and	hreakaway char.	1	Del. quantity cm3/:	11.013.00
because, danter and	Di Cultura) Criat	1	> 1000s.:	(9 00 15 00)
		T	Diamonaian am7/	E E
4.4	4/00	Ť	Dispersion cm3/:	
1st speed 1/min:	1480	†	> 1000s.:	
Shutoff		+	2nd speed 1/min:	450
electromagnet>Volt:	12	+	Shutoff	
Del. quantity cm3/:	0,03,0	+	electromagnet>Volt:	12
> 1000s.:		1	Del. quantity cm3/:	
2nd speed 1/min:		1	> 1000s.:	
Shutoff	1430	1.	10000.	
	12	Ţ	a a a a a a a a a a a a a a a a a a a	فينجا طماء ينجعنه
electromagnet Volt:		Ť	Automatic starting 1	uet detivery:
Del. quantity cm3/:		†		
> 1000s.:		+	1st speed 1/min:	250
3rd speed 1/min:	1350	+	Shutoff	
Shutoff		+	electromagnet>Volt:	12
electromagnet>Volt:	12	+	Del. quantity cm3/:	
Del. quantity cm3/:		1	> 1000s.:	
	(46,5058,5)	1	,0000.	
		T	2nd speed 1/min	170
5th speed 1/min:	1300	T	2nd speed 1/min:	130
Shutoff	4.0	†	Shutoff	40
electromagnet>Volt:		+	electromagnet>Volt:	
Del. quantity cm3/:	61.5064.50	+	Del. quantity cm3/:	70.0110.0

10005.: -

4th speed 1/min: 100

Shutoff

electromagnet>Volt: 12
Del. quantity cm3/: 60.00...110,0
> 1000s.: -

Shutoff electromagnet:

Cut-in

>min voltage : 10,0 Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K mm: -

mm: 5,2...5,6 mm: 1,2...1,6 KF MS SVS max.

mm: 2,7 mm: 32,2...37,2 mm: 39,5...45,1 Ya Yb

Remarks:

: 4 030 536 09

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : SOF Edition : 09.08.96 replaces Calibrating oil : ISO-4113 Injection pump : VE4/12F1800R689 : 0 460 424 136 Type number Customer Part-No. : Customer-specific information Customer : IVECO-SOFIM : 8140,23,2585 Engine KW: 76 Power TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 027 assembly> Opening | bar: 250.00...253.00 Pressure> Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length> Start of delivery mm: -Prestroke (from BDC): -Injection-pump setting values Test specifications in parentheses

Setting value mm: 1,00...1,20 Shutoff electromagnet>Volt: 12 Supply-pump pressure Speed 1/min: 1200 Charge press hPa: 1200 Setting value bar: 6,90...7,50 electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1100 Speed Charge press. hPa: 1200 Del. quantity cm3/ 1000s.: 58.00...59.00 Shutoff electromagnet>Volt: 12 cm3/: 4,0 Dispersion 1000s.: (4,5) Full-load del. w/out charge press.: 1/min: 550 Del. quantity cm3/ 1000s.: 30,00...31,00 Shutoff electromagnet>Volt: 12 Low-idle speed regulation 1/min: 375 Speed Del. quantity cm3/ 1000s.: 5,00...9,00 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 6.0 1000s.: (6,5) Full-load speed regulation Speed 1/min: 2000 Charge press hPa: 1200 Del. quantity cm3/ 1000s.: 40,00...46,00 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Del. quantity cm3/: 60.0...110,0 mind> 1000s.: 60.0 Shutoff electromagnet>Volt: 12 Inspection-pump test specifications Test specifications in parentheses

Timing-device travel

Charge press. hPa: 1200

1/min: 1200

	+	Delivery-quant. and	breakaway char.:
Timing-device characteristic:	‡	•	, , , , , , , , , , , , , , , , , , , ,
1st speed 1/min: 1200	+	1st speed 1/min:	800
Charge press hPa: 1200	+	Charge-air pressure-	
TD travel mm: 1,001,20	+	point> hPa:	
> mm: (0,401,80)	+	LDA-stroke mm:	4,8
electromagnet>Volt: 12,0	+	Shutoff	
2nd speed	+	electromagnet>Volt:	
Charge press hPa: 1200	+	Del. quantity cm3/:	
TD travel mm: 2,903,50	+		(47,5054.50)
> mm: (2,503,90)	+	2nd speed 1/min:	
Shutoff	†	Charge press. hPa:	1200
electromagnet>Volt: 12	†	Shutoff	40.0
3rd speed 1/min: 1800	†	electromagnet Volt:	12,0
Charge press hPa: 1200	†	Del. quantity cm3/:	
TD travel mm: 4,505,30	†	> 1000s.:	
> mm: (4,205,60)	†	3rd speed 1/min:	
Shutoff	†	Charge press. hPa: Shutoff	1200
electromagnet>Volt: 12	Ť		10
Supply-pump pressure characteristic:	Ť	electromagnet>Volt:	
supply-pump pressure characteristic.	T	Del. quantity cm3/: > 1000s:	(13,027,0)
1st speed 1/min: 600	Ι	4th speed 1/min:	2000
Charge press. hPa: 1200	Ι	Charge press. hPa:	
Supply-pump	I	Shutoff	1200
pressure> bar: 4,405,00	1	electromagnet>Volt:	12 N
> bar: -	1	Del. quantity cm3/:	
Shutoff	1		(38,547,5)
electromagnet>Volt: 12	1	5th speed 1/min:	
2nd speed 1/min: 1200	1	Charge press. hPa:	
Charge press. hPa: 1200	1	Shutoff	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Supply-pump	1	electromagnet>Volt:	12,0
pressure> bar: 6,907,50	+	Del. quantity cm3/:	
> bar: -	+		(58,0065,00)
Shutoff	+	6th speed 1/min:	
electromagnet>Volt: 12	+	Charge press. hPa:	1200
3rd speed 1/min: 1800	+	Shutoff	
Charge press. hPa: 1200	+	electromagnet>Volt:	12,0
Supply-pump	+	Del. quantity cm3/:	58,059,0
pressure> bar: 9,09,6	+	> 1000s.:	(55,062,0)
> bar: -	+	7th speed 1/min:	
Shutoff	+	Charge press. hPa:	1200
electromagnet>Volt: 12	1	Shutoff	
		electromagnet>Volt:	
Overflow quantity at overflow valve		Del. quantity cm3/:	
4		8th speed 1/min:	
1st speed		Charge press. hPa:	_
Charge press. hPa: 1200		Shutoff	10
Shutoff		electromagnet>Volt:	
electromagnet>Volt: 12	I	Del. quantity cm3/: > 1000s.:	(27,0034.00)
Overflow : 111.1155.5 quantity> cm3/10s: (96,1170,5)	I	- 10003.:	(21,000)4.00)
2nd speed 1/min: 1800	Ι		
Charge press. hPa: 1200	I		
Shutoff	I	Electr. shutoff:	
electromagnet>Volt: 12	1	ceeci i silatoi i i	
Overflow : 152.7208.30	1	1st speed 1/min:	350
quantity> cm3/10s: (137,7223.30)		Del. quantity cm3/:	
damine of the same	1		(0.003.00)

```
Shutoff
electromagnet>volt: -
Idle delivery:
              1/min: 375
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 5,0...9,0
             1000s.: (3.0...11.0)
>
               cm3/: 6,0
Dispersion
             1000s.: (6,5)
              1/min: 425
2nd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0,00...3,00
             1000s.: -
              1/min: 275
3rd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 34,0...54,0
             1000s.: -
Automatic starting fuel delivery:
              1/min: 510
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 60.00...110,0
             1000s.: -
2nd speed
              1/min: 200
Shutoff
electromagnet>Volt: 12,0
Del. quantity cm3/: 75,0...105,0
             1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                   : 10,0
                   : 12,0
Rated voltage
Mounting and assembly dimensions:
Designation
                 mm: 3,5...3,7
K
KF
                 mm: -
                 mm: 1,3...1,6
MS1
                 mm: 4,8
LDA stroke
                 mm: KSB=10,0
XK
                 mm: 33,0...35,0
Ya
                 mm: 44,0...50,0
Yb
Remarks:
                   :
```

Note inst. in remarks column

Test sheet : SOF Edition : 09.08.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/12F1800R690 Type number : 0 460 424 137

Customer Part-No. :

Customer-specific information
Customer : IVECO-SOFIM

Engine : 8140.43.2585

Power KW: 85

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 027

Opening |

Pressure> bar: 250.00...253.00

Perforated-plate

diameter> mm: 0,5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1100 Charge press. hPa: 1200 Setting value mm: 1,50...1,70

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1100 Charge press hPa: 1200

Setting value bar: 6,50...7,10

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1750 Charge press. hPa: 1200

Del. quantity cm3/

1000s.: 62.50...63,50

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4,0 > 1000s.: (4,5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 33,50...34,50

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

> 1000s.: 5,00...9,00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 6.0 > 1000s.: (6,5)

Full-load speed regulation

Speed 1/min: 2000 Charge press hPa: 1200

Del. quantity cm3/

> 1000s.: 40,00...46,00

Shutoff

electromagnet>Volt: 12

Start:

peed 1/min: 100

Del. quantity cm3/: 60.0...110,0

mind> 1000s.: 60.0

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

+	Shutoff
Timing-device characteristic:	electromagnet>Volt: 12
+	Del. quantity cm3/: 53,5054,50
1st speed 1/min: 1100 +	> 1000\$.: (50,5057.50)
Charge press hPa: 1200	2nd speed 1/min: 2200
TD travel mm: 1,501,70 + mm: (0,902.30)	Charge press. hPa: 1200
	Shutoff
electromagnet>Volt: 12,0	electromagnet Volt: 12,0
2nd speed 1/min: 1600 + Charge press hPa: 1200 +	Del. quantity cm3/: 0.004.00 > 1000s.: -
TD travel mm: 3.704.30	3rd speed 1/min: 2100
> mm: (3.304,70)	Charge press. hPa: 1200
Shutoff	Shutoff
electromagnet>Volt: 12	electromagnet>Volt: 12
3rd speed 1/min: 1400 +	Del. quantity cm3/: 15,025,0
Charge press hPa: 1200 +	> 1000s.: (13,027,0)
TD travel mm: 2,503,10 +	4th speed 1/min: 2000
> mm: (2,103,50)	Charge press. hPa: 1200
Shutoff	Shutoff
electromagnet>Volt: 12	electromagnet>Volt: 12,0
Supply nump processes shapestonistics	Del. quantity cm3/: 40,046,0 > 1000s.: (38,547,5)
Supply-pump pressure characteristic:	> 1000s.: (38,547,5) 5th speed 1/min: 1800
1st speed 1/min: 600	Charge press. hPa: 1200
Charge press. hPa: 1200	Shutoff
Supply-pump +	electromagnet>Volt: 12,0
pressure> bar: 4,905,50	Del. quantity cm3/: 61,0065.00
> bar: -	> 1000s.: (59,5066,50)
Shutoff	6th speed
electromagnet>Volt: 12 +	Charge press. hPa: 1200
2nd speed 1/min: 1100 +	Shutoff
Charge press. hPa: 1200 +	electromagnet>Volt: 12,0
Supply-pump +	Del. quantity cm3/: 62,563,5
pressure> bar: 6,507,10 +	> 1000s.: (59,566,5)
> bar: - +	7th speed 1/min: 600 Charge press. hPa: 1200
electromagnet>Volt: 12	Shutoff
etectionagnet/vott. 12	electromagnet>Volt: 12,0
Overflow quantity at overflow valve	Del. quantity cm3/: 62.066.0
+	8th speed 1/min: 550
1st speed 1/min: 600	Charge press. hPa: -
Charge press. hPa: 1200	Shutoff
Shutoff +	electromagnet>Volt: 12
electromagnet>Volt: 12 +	Del. quantity cm3/: 33.5034.50
Overflow : 75.0119.5	> 1000s.: (30.5037.50)
quantity> cm3/10s: (60,0134,5)	
2nd speed 1/min: 1800 +	
Charge press. hPa: 1200 + Shutoff +	Electr. shutoff:
electromagnet>Volt: 12	ecopii. Silutorii.
Overflow : 97,2180,5	1st speed 1/min: 325
quantity> cm3/10s: (82,2195.5)	Charge press. hPa: -
+	Del. quantity cm3/: 0.003.00
Delivery-quant. and breakaway char.:	> 1000s.: (0.003.00)
+	Shutoff
+	electromagnet>volt: -
1st speed	Talla daliburan
Charge-air pressure-setting +	Idle delivery:
point> hPa: 500 +	1st speed 1/min: 375

```
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 5,0...9,0
             1000s.: (3.0...11.0)
               cm3/: 6,0
Dispersion
             1000s.: (6,5)
1/min: 425
2nd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0,00...3,00
             1000s.: -
3rd speed
              1/min: 275
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40,0...54,0
             1000s.: -
Automatic starting fuel delivery:
              1/min: 500
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 29.00...39,0
             1000s.: -
              1/min: 200
2nd speed
Shutoff
electromagnet>Volt: 12,0
Del. quantity cm3/: 78,0...108,0
             1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                   : 10,0
Rated voltage
                   : 12,0
Mounting and assembly dimensions:
Designation
                 mm: 3,5...3,7
K
KF
                 mm: -
                 mm: 1,4...1,7
MS1
                 mm: 7,0
LDA stroke
                 mm: KSB=5,7
XK
                 mm: 33,0...35,0
Ya
                 mm: 44,0...50,0
Yb
Remarks:
                   :
```

Note inst. in remarks column

: SOF Test sheet : 09.08.96 Edition

replaces

Calibrating oil : ISO-4113

: VE4/12F1800R673 Injection pump : 0 460 424 139 Type number

Customer Part-No. :

Customer-specific information Customer : IVECO-SOFIM

: 8140.43.3780 Engine

KW: 85 Power

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer>: 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly>

Openina

bar: 250.00...253.00 Pressure>

Perforated-plate

mm: 0,5 diameter>

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length>

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100 Speed Charge press. hPa: 1200 Setting value mm: 1,50...1,70

Shutoff

electromagnet>Volt: 24

Supply-pump pressure

1/min: 1100 Speed Charge press hPa: 1200

Setting value bar: 6,50...7,10

electromagnet>Volt: 24

Full-load del. with charge press.:

1/min: 1750 Speed Charge press. hPa: 1200

Del. quantity cm3/

1000s.: 62.50...63,50

Shutoff

electromagnet>Volt: 24 Dispersion cm3/: 4,0 1000s.: (4,5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 33,50...34,50

Shutoff

electromagnet>Volt: 24

Low-idle speed regulation

1/min: 375 Speed

Del. quantity cm3/

1000s.: 5,00...9,00

Shutoff

electromagnet>Volt: 24 Del. quantity cm3/: 6.0 1000s.: (6,5)

Full-load speed regulation

1/min: 2000 Speed Charge press hPa: 1200 Del. quantity cm3/

1000s.: 40,00...46,00 >

Shutoff

electromagnet>Volt: 24

Start:

1/min: 100 Speed

Del. quantity cm3/: 60.0...110,0

1000s.: 60.0 mind>

Shutoff

electromagnet>Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device chara	cteristic:	1		
		+	1st speed 1/min:	800
1st speed 1/min:	1100	+	Charge-air pressure	-setting
Charge press hPa:	1200	+		500
TD travel mm:	1,501,70	+	LDA-stroke mm:	7,0
> mm:	(0,902.30)	1	Shutoff	. , -
electromagnet>Volt:	24.0	1	electromagnet>Volt:	24
2nd speed 1/min:	1600	1	Del. quantity cm3/:	53.50 54.50
	1200	1		(50,5057.50)
TD travel mm:		1	2nd speed 1/min:	
	(3.304,70)	Ι	Charge press. hPa:	
Shutoff	(3.304)/(0)	Ţ	Shutoff	1200
	2/.	T		2/ 0
electromagnet>Volt:		Ť	electromagnet Volt:	24,0
3rd speed 1/min:		†	Del. quantity cm3/:	
Charge press hPa:		†	> 1000s.:	
TD travel mm:	2,503,10	†	3rd speed 1/min:	
	(2,103,50)	t	Charge press. hPa:	1200
Shutoff		+	Shutoff	
electromagnet>Volt:	24	+	electromagnet>Volt:	
		+	Del. quantity cm3/:	
Supply-pump pressure	e characteristic:	+		(13,027,0)
		+	4th speed 1/min:	2000
1st speed 1/min:	600	+	Charge press. hPa:	1200
Charge press. hPa:	1200	+	Shutoff	
Supply-pump		1	electromagnet>Volt:	24,0
	4,905,50	1	Del. quantity cm3/:	40.046.0
> bar:		1	> 1000s.:	(38,547,5)
Shutoff		1	5th speed 1/min:	
electromagnet>Volt:	24	1	Charge press. hPa:	
2nd speed 1/min:		1	Shutoff	1200
Charge press. hPa:		T	electromagnet>Volt:	2/, N
	1200	Τ		
Supply-pump	/ FO 7 10	<b>T</b>	Del. quantity cm3/:	
	6,507,10	Ť		(59,5065,50)
> bar:	<del>-</del>	†	6th speed 1/min:	
Shutoff	•	t	Charge press. hPa:	1200
electromagnet>Volt:		†	Shutoff	
3rd speed 1/min:		t	electromagnet>Volt:	
Charge press. hPa:	1200 -	t	Del. quantity cm3/:	
Supply-pump		†		(59,566,5)
	8,59,1	t	7th speed 1/min:	
Shutoff	•	+	Charge press. hPa:	1200
electromagnet>Volt:	24	+	Shutoff	
	-	╀	electromagnet>Volt:	24,0
Overflow quantity at	: overflow valve -	+	Del. quantity cm3/:	
	•	+	8th speed 1/min:	550
1st speed 1/min:	600	1	Charge press. hPa:	_
Charge press. hPa:	1200 -	1	Shutoff	
Shutoff		<del>↓</del>	electromagnet>Volt:	24
electromagnet>Volt:	24	1	Del. quantity cm3/:	
Overflow :	75.0119.5	1		(30.5037.50)
quantity> cm3/10s:		1	, 5555	
2nd speed 1/min:		L		
Charge press. hPa:		L		
Shutoff	1200	I	Electr. shutoff:	
	2/.	Ω	Lecti. Sincoll.	
electromagnet>Volt:	97,2180,5 -	Γ	1st speed 1/min:	725
Overflow :	71,C10U,J -	Γ		
quantity> cm3/10s:	(06,6193.3)		Charge press. hPa:	
	-	T	Del. quantity cm3/:	
Delivery-quant. and	preakaway char.: -	<b>†</b>	> 1000s.:	(0.003.00)

```
Shutoff
electromagnet>volt: -
Idle delivery:
1st speed
             1/min: 375
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 5,0...9,0
             1000s.: (3.0...11.0)
Dispersion
               cm3/: 6,0
             1000s.: (6,5)
             1/min: 425
2nd speed
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 0,00...3,00
             1000s.: -
3rd speed
             1/min: 275
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 40,0...54,0 > 1000s.: -
Automatic starting fuel delivery:
1st speed
             1/min: 500
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 29.00...39,0
            1000s.: -
2nd speed
             1/min: 200
Shutoff
electromagnet>Volt: 24,0
Del. quantity cm3/: 78,0...108,0
            1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                   : 20,0
Rated voltage
                   : 24,0
Mounting and assembly dimensions:
Designation
                mm: 3,5...3,7
K
KF
                mm: -
MS1
                mm: 1,4...1,7
LDA stroke
                mm: 7,0
                mm: KSB=5,7
XK
                mm: 33,0...35,0
Ya
                mm: 44,0...50,0
Yb
Remarks:
```

Note inst. in remarks column

Test sheet : SOF Edition : 09.08.96

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/12F1800R698 Type number : 0 460 424 141

Customer Part-No. :

Customer-specific information : IVECO-SOFIM Customer

Engine : 8142.43.3800

Power KW: 85

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly>

Opening

bar: 250.00...253.00 Pressure>

Perforated-plate

mm: 0,5 diameter>

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100 Charge press. hPa: 1200 Setting value mm: 1,50...1,70

Supply-pump pressure

1/min: 1100 Speed Charge press hPa: 1200

Setting value bar: 6,50...7,10

Full-load del. with charge press.:

1/min: 1750 Speed Charge press. hPa: 1200

Del. quantity cm3/

1000s.: 62.50...63,50

cm3/: 4,0Dispersion 1000s.: (4,5) >

Full-load del. w/out charge press.:

Speed 1/min: 550 Del. quantity cm3/

1000s.: 33,50...34,50

Low-idle speed regulation

1/min: 375 Speed

Del. quantity cm3/

1000s.: 5,00...9,00

Del. quantity cm3/: 6.0 1000s.: (6,5)

Full-load speed regulation

1/min: 2000 Speed Charge press hPa: 1200

Del. quantity cm3/

1000s.: 40,00...46,00

Start:

1/min: 100 Speed

Del. quantity cm3/: 60.0...110,0

1000s.: 60.0 mind>

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1100 hPa: 1200 Charge press

mm: 1,50...1,70 TD travel mm: (0,90...2.30)

2nd speed 1/min: 1600 Charge press

hPa: 1200 mm: 3.70...4.30 TD travel mm: (3.30...4,70)

3rd speed 1/min: 1400 Charge press hPa: 1200

TD travel mm: 2,50...3,10

> mm: (2,103,50)	+ Charge press. hPa: 1200
Complete more annual about the state of	Del. quantity cm3/: 62.066.0
Supply-pump pressure characteristic:	+ 8th speed 1/min: 550
1st speed 1/min. 400	+ Charge press. hPa: -
1st speed 1/min: 600	<pre>pel. quantity cm3/: 33.5034.50</pre>
Charge press. hPa: 1200	7 10008.: (30.3037.30)
Supply-pump	†
pressure> bar: 4,905,50 > bar: -	†
2nd speed 1/min: 1100	T Floots shutoff.
	+ Electr. shutoff:
Charge press. hPa: 1200	1st speed 1/min: 325
Supply-pump	
pressure> bar: 6,507,10 bar: -	+ Charge press. hPa: - + Del. quantity cm3/: 0.003.00
3rd speed 1/min: 1800	+ > 1000s.: (0.003.00)
	+ Shutoff
Charge press. hPa: 1200	
Supply-pump	+ electromagnet>volt: -
pressure> bar: 8,59,1	Talla dalayanya
Overflow quantity at overflow valve	† Idle delivery:
Over flow quantity at over flow valve	1st speed 1/min: 375
1st speed 1/min: 600	+ Del. quantity cm3/: 5,09,0
Change proce hose 1200	1000s.: (3.011.0)
Charge press. hPa: 1200 Overflow: 75.0119.5	Dispersion cm3/: 6,0
quantity> cm3/10s: (60,0134,5)	1000s.: (6,5)
2nd speed 1/min: 1800	2nd speed 1/min: 425
channe anno a 1200	
Charge press. hPa: 1200	Del. quantity cm3/: 0,003,00 + > 1000s.: -
Overflow : 97,2180,5	3rd speed 1/min: 275
quantity> cm3/10s: (82,2195.5)	+ Del. quantity cm3/: 40,054,0
Delivery-quant. and breakaway char.:	+ > 1000s.: -
becivery-quarit. and breakaway char	I 10003
	Automatic starting fuel delivery:
1st speed 1/min: 800	Advonacto scarcing race accivery.
Charge-air pressure-setting	1st speed 1/min: 500
point> hPa: 500	Del. quantity cm3/: 29.0039,0
LDA-stroke mm: 5,5	+ > 1000s.: -
Del. quantity cm3/: 53,5054,50	10000
> 10008.: (50,5057.50)	2nd speed 1/min: 200
2nd speed 1/min: 2200	+ Del. quantity cm3/: 78,0108,0
Charge press. hPa: 1200	+ > 1000s.: -
Del. quantity cm3/: 0.004.00	1
> 1000s.: -	Mounting and assembly dimensions:
3rd speed 1/min: 2100	_
Charge press. hPa: 1200	+ Designation
Del. quantity cm3/: 15,025,0	+ K mm: 3,53,7
> 1000s.: (13,027,0)	+ KF mm: -
4th speed 1/min: 2000	+ MS1 mm: 1,41,7
Charge press. hPa: 1200	+ LDA stroke mm: 5,5
Del. quantity cm3/: 40,046,0	+ XK mm: KSB=5,7
> 1000s.: (38,547,5)	+ Ya mm: 33,035,0
5th speed 1/min: 1800	+ Yb mm: 44,050,0
Charge press. hPa: 1200	+
Del. quantity cm3/: 61,0065.00	+ Remarks:
> 1000s.: (59,5066,50)	+ :
6th speed 1/min: 1750	+ :
Charge press. hPa: 1200	+
Del. quantity cm3/: 62,563,5	+
> 1000s.: (59,566,5)	+
7th speed 1/min: 600	+
and the company of th	•

Note inst. in remarks column

Test sheet : SOF

Edition : 09.08.96

replaces :

Calibrating oil : ISO-4113

Injection pump : VE4/12F1800R699 Type number : 0 460 424 142

Customer Part-No. :

Customer-specific information
Customer : IVECO-SOFIM

Engine : 8140.23.2585

Engine . 0140.25.25

Power KW: 76

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 027

Opening

Pressure> bar: 250.00...253.00

Perforated-plate

diameter> mm: 0,5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200 Charge press. hPa: 1200 Setting value mm: 1,00...1,20

Supply-pump pressure

Speed 1/min: 1200 Charge press hPa: 1200

Setting value bar: 6,90...7,50

Full-load del. with charge press.:

Speed 1/min: 1100 Charge press. hPa: 1200

Del. quantity cm3/

> 1000s.: 58.00...59.00

Dispersion cm3/: 4,0 > 1000s.: (4,5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 30,00...31,00

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

> 1000s.: 5,00...9,00

Del. quantity cm3/: 6.0 > 1000s.: (6,5)

Full-load speed regulation

Speed 1/min: 2000 Charge press hPa: 1200

Del. quantity cm3/

> 1000s.: 40,00...46,00

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.0...110,0

mind> 1000s.: 60.0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1200 Charge press hPa: 1200

TD travel mm: 1,00...1,20 mm: (0,40...1,80)

2nd speed 1/min: 1500 Charge press hPa: 1200

TD travel mm: 2,90...3,50 mm: (2,50...3,90)

3rd speed 1/min: 1800 Charge press hPa: 1200

TD travel mm: 4,50...5,30

Supply-pump pressure characteristic:  1st speed   1/min: 600	Charge press. hPa: 1200 Del. quantity cm3/: 56,568,5 8th speed 1/min: 550 Charge press. hPa: -
1st speed 1/min: 600 + 00 Charge press. hPa: 1200 + 00 Supply-pump + >	8th speed 1/min: 550
1st speed 1/min: 600 Charge press. hPa: 1200 Charge press. hPa: 1200 Charge pump	
Charge press. hPa: 1200 + C Supply-pump + >	charge press. Hra
Supply-pump + >	Del. quantity cm3/: 30,0031,00
oupply pump	> 1000s.: (27,0034.00)
pressure har: 4.40 5.00	70000 (27,0054.00)
pressure> bar: 4,405,00 + bar: -	
	Mech. shutoff:
Charge press. hPa: 1200	The office of the
	1st speed
	Charge press. hPa: 1200
> bar: - + 0	Del. quantity cm3/: 0.003.00
	> 1000s.: -
Charge press. hPa: 1200	
	Electr. shutoff:
pressure> bar: 9,09,6 +	
	1st speed 1/min: 350
	Del. quantity cm3/: 0.003.00
	> 1000s.: (0.003.00)
· ·	Shutoff
	electromagnet>volt: -
Charge press. hPa: 1200	Talla dal Cormon
Overflow : 111.1155.5 + I	Idle delivery:
quantity> cm3/10s: (96,1170,5)	1st speed 1/sin. 775
	1st speed 1/min: 375 Del. quantity cm3/: 5,09,0
	> 1000s.: (3.011.0)
	Dispersion cm3/: 6,0
	> 1000s.: (6,5)
	2nd speed
	Del. quantity cm3/: 0,003,00
	> 1000s.: -
1st speed	3rd speed 1/min: 275
	Del. quantity cm3/: 34,054,0
	> 1000s.: -
LDA-stroke mm: 4,8 +	
	Automatic starting fuel delivery:
> 1000s.: (47,5054.50) +	
	1st speed 1/min: 510
	Del. quantity cm3/: 60.00110,0
Del. quantity cm3/: 0.004.00	> 1000s.: -
> 1000s.: -	20 d
	2nd speed
	electromagnet>Volt: 12,0
	Del. quantity cm3/: 75,0105,0
4th speed 1/min: 2000 +	> 1000s.: -
Charge press. hPa: 1200	,0000:
	Mounting and assembly dimensions:
> 1000s.: (38,547,5)	, and a common of a small of a sm
	Pesignation
Charge press. hPa: 1200 + K	
Del. quantity cm3/: 59,5063,50 + K	CF mm: -
> 1000s.: (58,0065,00) + M	1S1 mm: 1,31,6
	DA stroke mm: 4,8
	(K mm: KSB=10,0
	(a mm: 33,035,0
> 1000s.: (55,062,0) + YI	b mm: 44,050,0

Remarks: D08

Note inst. in remarks column

: SOF Test sheet

Edition : 09.08.96

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/12F1800R713

Type number : 0 460 424 145

Customer Part-No. :

Customer-specific information

Customer : IVECO-SOFIM

Engine : 8140.43.2610

Power KW: 85

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly>

Opening |

bar: 250.00...253.00 Pressure>

Perforated-plate

mm: 0,5 diameter>

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00

mm: 450 x Length>

Start of delivery

Prestroke mm: -(from BDC): -

Injection-pump setting values

Test specifications in parentheses

Timing-device travel

1/min: 1100

Charge press. hPa: 1200

Setting value mm: 1,50...1,70

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1100 Speed

Charge press hPa: 1200

Setting value bar: 6,50...7,10

electromagnet>Volt: 12

Full-load del. with charge press.:

1/min: 1750 Speed

Charge press. hPa: 1200

Del. quantity cm3/

1000s.: 62.50...63,50 >

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4,01000s.: (4,5)

Full-load del. w/out charge press.:

1/min: 550 Speed

Del. quantity cm3/

1000s.: 33,50...34,50

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

1/min: 375 Speed

Del. quantity cm3/

1000s.: 5,00...9,00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 6.0 1000s.: (6,5)

Full-load speed regulation

1/min: 2000 Speed Charge press hPa: 1200

Del. quantity cm3/

1000s.: 40,00...46,00

Shutoff

electromagnet>Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 60.0...110,0

1000s.: 60.0 mind>

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

		+	Shutoff	
Timing-device chara	cteristic:	1	<pre>electromagnet&gt;Volt: Del. quantity cm3/:</pre>	
1st speed 1/min:	1100	+	> 1000s.:	(50,5057.50)
Charge press hPa:	1200	+	2nd speed 1/min:	2200
TD travel mm:		+	Charge press. hPa:	
	(0,902.30)	+	Shutoff	
electromagnet>Volt:	12,0	+	electromagnet Volt:	12,0
2nd speed 1/min:	1600	+	Del. quantity cm3/:	0.004.00
Charge press hPa:		÷	> 1000s.:	
TD travel mm:	3.704.30	+	3rd speed 1/min:	
> mm:	(3.304,70)	+	Charge press. hPa:	1200
Shutoff	•-	+	Shutoff	
electromagnet>Volt:		+	electromagnet>Volt:	
3rd speed 1/min:		†	Del. quantity cm3/:	
	1200	†		(13,027,0)
TD travel mm:	(2.10 7.50)	†	4th speed 1/min:	
Shutoff	(2,103,50)	T	Charge press. hPa: Shutoff	1200
electromagnet>Volt:	12	Ι	electromagnet>Volt:	12 0
etectionagnet vott.	12	I	Del. quantity cm3/:	
Supply-pump pressur	e characteristic:	1	> 1000s.:	(38,547,5)
emble of transfer to account		1	5th speed 1/min:	1800
1st speed 1/min:	600	+	Charge press. hPa:	
Charge press. hPa:		+	Shutoff	
Supply-pump		+	electromagnet>Volt:	12,0
pressure> bar:	4,905,50	+	Del. quantity cm3/:	
> bar:	_	+		(59,5066,50)
Shutoff	••	+	6th speed 1/min:	
electromagnet>Volt:	12	+	Charge press. hPa:	1200
2nd speed 1/min:		†	Shutoff	40.0
Charge press. hPa:	1200	†	electromagnet>Volt:	
Supply-pump pressure> bar:	6,507,10	T	Del. quantity cm3/: > 1000s:	(59,566,5)
> bar:		I	7th speed 1/min:	
Shutoff		1	Charge press. hPa:	
electromagnet>Volt:	12	1	Shutoff	,200
	, -	1	electromagnet>Volt:	12,0
Overflow quantity at	t overflow valve	+	Del. quantity cm3/:	62.066.0
· · ·		+	8th speed 1/min:	550
1st speed 1/min:		+	Charge press. hPa:	-
Charge press. hPa:	1200	+	Shutoff	• •
Shutoff	40	+	electromagnet>Volt:	
electromagnet>Volt:	72 0 440 5	†	Del. quantity cm3/:	
	75.0119.5	<b>T</b>	> 1000s.:	(30.5037.50)
quantity> cm3/10s: 2nd speed   1/min:	1800	I		
Charge press. hPa:		I		
Shutoff	1230	1	Electr. shutoff:	
electromagnet>Volt:	12	1		
	97,2180,5	+	1st speed 1/min:	325
quantity> cm3/10s:		+	Charge press. hPa:	_
•		+	Del. quantity cm3/:	
Delivery-quant. and	breakaway char.:	+		(0.003.00)
		†	Shutoff	
1.aa.d 4/=-	900	†	electromagnet>volt:	-
lst speed 1/min:		T	Idla dalivani	
Charge-air pressure- point>		I	Idle delivery:	
001Nt> NPa: NA-stroke mm:	5.5	I	1st speed 1/min.	375

```
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 5,0...9,0
> 1000s.: (3.0...11.0)
Dispersion cm3/: 6,0
             1000s.: (6,5)
2nd speed
              1/min: 425
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0,00...3,00
             1000s.: -
3rd speed
              1/min: 275
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40,0...54,0
             1000s.: -
Automatic starting fuel delivery:
              1/min: 500
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 29.00...39,0
             1000s.: -
2nd speed
              1/min: 200
Shutoff
electromagnet>Volt: 12,0
Del. quantity cm3/: 78,0...108,0 > 10005:: -
Shutoff electromagnet:
Cut-in
                    : 10,0
>min voltage
                    : 12,0
Rated voltage
Mounting and assembly dimensions:
Designation
                 mm: 3,5...3,7
K
KF
                 mm: -
MS1
                 mm: 1,4...1,7
LDA stroke
                 mm: 5,5
XK
                 mm: KSB=5,7
                 mm: 33,0...35,0
Ya
Yb
                 mm: 44,0...50,0
Remarks:
                   :
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : CAS : 14.08.96 Edition replaces Calibrating oil : ISO-4113 : VE6/12F1100R102 Injection pump Type number : 0 460 426 025 Customer Part-No.: 3 228 639 Customer-specific information Customer : CASE : DT 402 Engine Speed 1/min: 103 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 020 assembly> Opening bar: 169.00...175.00 Pressure> Perforated-plate diameter> mm: 0.6 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 840 x Length> Start of delivery mm: 0,2 Prestroke > (from BDC): +-0,02(0,04) Start of delivery block mm: 1.0 Piston stroke mm: +-0.02(0.06)> Outlet > Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 600 Charge press. hPa: 1000 Setting value mm: 3.4...3.6 Supply-pump pressure 1/min: 600 Charge press hPa: 1000 Setting value bar: 5.0...5.6 Full-load del. with charge press.: 1/min: 800 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 99.0...100.0 cm3/: 3.5Dispersion 1000s.: (3.5) Full-load del. w/out charge press.: 1/min: 600 Speed Del. quantity cm3/ 1000s.: 81.5...82.5 Low-idle speed regulation 1/min: 375 Del. quantity cm3/ 1000s.: 20.0...26.0 Del. quantity cm3/: 5.0 1000s.: (5.0) Full-load speed regulation 1/min: 1200 Speed Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 33.0...36.0 Start: 1/min: 100 Speed Del. quantity cm3/: 85.0...145.0 1000s.: 85.0 mind> Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1/min: 400 1st speed hPa: 1000 Charge press mm: 1,3...2,1 TD travel mm: (1.0...2.4) 1/min: 600 2nd speed Charge press hPa: 1000 mm: 3.2...3.6 TD travel mm: (2.7...4.1)

3rd speed 1/min: 700	† 7th speed 1/min: 600
Charge press hPa: 1000	+ Charge press. hPa: -
TD travel mm: 3.64.4	+ Del. quantity cm3/: 81.582.5
> mm: (3.34.7)	+ > 1000s.: (79.085.0)
<b>6</b>	†
Supply-pump pressure characteri	
1-1-1-100	+ Mech. shutoff:
1st speed 1/min: 400	1.4
Charge press. hPa: 1000	+ 1st speed 1/min: 1080
Supply-pump	+ Charge press. hPa: 1000
pressure> bar: 3.94.5	Del. quantity cm3/: 0.03.0
2nd speed 1/min: 600	+ > 1000s.: -
Charge press. hPa: 1000	†
Supply-pump 50	+ Idle delivery:
pressure> bar: 5.05.6	†
3rd speed 1/min: 1080	+ 1st speed 1/min: 375
Charge press. hPa: 1000	+ Del. quantity cm3/: 20.026.0
Supply-pump	† > 1000s.: (18.028.0)
pressure> bar: 6.97.5	Dispersion cm3/: 5.0
	+ > 1000s.: (5.0)
Overflow quantity at overflow v	
	+ Del. quantity cm3/: 0.510.5
1st speed 1/min: 600	+ > 1000s.: -
Charge press. hPa: -	+ 3rd speed 1/min: 500
Overflow : 41.7083.	
quantity> cm3/10s: (26.7098	.40)
2nd speed 1/min: 1080	+
Charge press. hPa: 1000	Automatic starting fuel delivery:
Overflow : 55.60139	.00 +
quantity> cm3/10s: (40.6015	4.00)   1st speed 1/min: 200
•	+ Del. quantity cm3/: 95.0155.0
Delivery-quant. and breakaway c	
<b>,</b> , , , , , , , , , , , , , , , , , ,	<u> </u>
	+ 2nd speed 1/min: 440
1st speed 1/min: 600	+ Del. quantity cm3/: 35.085.0
Charge-air pressure-setting	+ > 1000s.: VH -> VL
point> hPa: 200	_
LDA-stroke mm: 4.0	+ 4th speed 1/min: 100
Del. quantity cm3/: 89.090.0	Del. quantity cm3/: 85.0145.0
> 1000s.: (86.591.	
2nd speed 1/min: 1280	
Charge press. hPa: 1000	→ Shutoff electromagnet:
Del. quantity cm3/: 0.03.0	indicate etectionagnee.
> 1000s.: -	↓ Cut-in
3rd speed 1/min: 1220	+ >min voltage :-
Charge press. hPa: 1000	+ Rated voltage : -
Del. quantity cm3/: 5.035.0	1 Mateu vottage :
> 1000s.: -	Mounting and assembly dimensions:
4th speed 1/min: 1200	Thousen's and assembly dimensions.
Charge press. hPa: 1000	T Designation
Del. quantity cm3/: 33.039.0	K mm: -
> 1000S.: (28.044.0	MS mm: 1.418
5th amond 1/min. 1000	T 110 (MILL 1.410
5th speed 1/min: 1080	
Charge press. hPa: 1000	→ LDA stroke mm: 4.0
Charge press. hPa: 1000 Del. quantity cm3/: 94.597.5	LDA stroke mm: 4.0 Ya mm: 37.239.2
Charge press. hPa: 1000 Del. quantity cm3/: 94.597.5 > 1000S.: (92.599.5	LDA stroke mm: 4.0 Ya mm: 37.239.2
Charge press. hPa: 1000 Del. quantity cm3/: 94.597.5 > 1000S:: (92.599.5 6th speed 1/min: 800	LDA stroke mm: 4.0 Ya mm: 37.239.2 Yb mm: 49.257,4
Charge press. hPa: 1000 Del. quantity cm3/: 94.597.5 > 1000S.: (92.599.5 6th speed 1/min: 800 Charge press. hPa: 1000	LDA stroke mm: 4.0 Ya mm: 37.239.2 Yb mm: 49.257,4 Remarks:
Charge press. hPa: 1000 Del. quantity cm3/: 94.597.5 > 1000S:: (92.599.5 6th speed 1/min: 800	LDA stroke mm: 4.0 mm: 37.239.2 mm: 49.257,4  Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test sheet : VWW

Edition : 30.07.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/8F2400R677 Type number : 0 460 484 108

Customer Part-No. :

Customer-specific information

Customer : VW

Engine : 1.6L

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 000

Opening

Pressure> bar: 144.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

Prestroke mm: 
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500

Setting value mm: 3.40...3.80

AFB/AFB

valve > Volt: 12

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500

Setting value bar: 6.30...6.90

KSB/AFB

valve > Volt: 12

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1500

Del. quantity cm3/

> 1000s.: 31.5...32.5

KSB/AFB 11

valve > Volt: 12

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 2.5 > 1000s.: (2.5)

Low-idle speed regulation

Speed 1/min: 425

Del. quantity cm3/

> 1000s.: 13.0...17.0

KSB/AFB

valve > Volt: 12

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 2.5 > 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2550

Del. quantity cm3/

> 1000s.: 17.0...23.0

KSB/AFB

valve > Volt: 12

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 31.50...61.50

mind> 1000s.: 31.50

KSB/AFB

Valve > Volt: 12

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 600

TD travel mm: 1.0...2.6

> mm:	(0.82.8)	∔ KSB/AFB	
KSB/AFB		<pre>→ valve &gt; Volt:</pre>	12
<pre>valve &gt; Volt:</pre>	<del>-</del>	→ Shutoff	
electromagnet>Volt:		+ electromagnet>Volt:	12
2nd speed 1/min:		Overflow :	55.60139.00
	1.202.40	quantity> cm3/10s:	
	(1.102.50)	1	
KSB/AFB		Delivery-quant. and	breakaway char
valve > Volt:	12	The section of the se	Dicakaway chair.
Shutoff		1	
electromagnet>Volt:	12	2nd speed 1/min:	2800
3rd speed 1/min:		KSB/AFB	2000
	3.104.10	valve > Volt:	12
	(3.004.20)	Shutoff	, _
KSB/AFB	(3.00:4:20)	electromagnet Volt:	12
valve > Volt:	12	Del. quantity cm3/:	U UU 3 UU
Shutoff	12		(0.003.00)
	10	3rd speed 1/min:	
<pre>electromagnet&gt;Volt: 4th speed 1/min:</pre>		KSB/AFB	2000
	6.007.20	- Valve > Volt:	10
	(5.907.30)		12
	(3.907.30)	Shutoff	10
KSB/AFB	13	electromagnet>Volt:	/ 00 42 00
valve > Volt:	12	Del. quantity cm3/:	4.0012.00
Shutoff	40	> 1000s.:	(3.0013.00)
electromagnet>Volt:	12	5th speed 1/min:	2550
- 1		KSB/AFB	40
Supply-pump pressure	e characteristic:	valve > Volt:	12
		Shutoff	4.5
1st speed 1/min:	600 -	electromagnet>Volt:	
Supply-pump	-	Del. quantity cm3/:	
•	3.404.40		(16.0024.00)
KSB/AFB	-	6th speed 1/min:	2400
valve > Volt:	12	KSB/AFB	
Shutoff	-	valve > Volt:	12
electromagnet>Volt:		├ Shutoff	
2nd speed 1/min:	1500 -	electromagnet>Volt:	
Supply-pump	-	Del. quantity cm3/:	
pressure> bar:	6.107.10		(27.031.0)
KSB/AFB	-	7th speed 1/min:	1500
<pre>valve &gt; Volt:</pre>	12 -	KSB/AFB	
Shutoff	-	- valve > Volt:	12
electromagnet>Volt:	12 -	- Shutoff	
3rd speed 1/min:	2400 -	electromagnet>Volt:	12
Supply-pump	-	Del. quantity cm3/:	31.532.5
pressure> bar:	8.809.80	> 1000s.:	(30.034.0)
KSB/AFB	-	8th speed 1/min:	600
<pre>valve &gt; Volt:</pre>	12 -	KSB/AFB	
Shutoff	-	valve > Volt:	12
electromagnet>Volt:	12	Shutoff	
	-	<pre>electromagnet&gt;Volt:</pre>	12
Overflow quantity at	overflow valve -	Del. quantity cm3/:	
1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		> 1000s.:	(22.528.5)
1st speed 1/min:	600	-	
KSB/AFB	-	_	
valve > Volt:	12	_	
Shutoff		Electr. shutoff:	
electromagnet>Volt:	12		
	44.4088.80	1st speed 1/min:	475
quantity> cm3/10s:		- Del. quantity cm3/:	
2nd speed 1/min:			(0.003.00)

```
Shutoff
electromagnet>volt: -
KSB/AFB
          > Volt: 12
valve
Damper set qty.:
Automatic starting fuel delivery:
             1/min: 350
1st speed
KSB/AFB
          > Volt: 12
valve
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 32.00...42.00
            1000s.: (32.00...42.00)
             1/min: 500
2nd speed
KSB/AFB
valve
             Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 19.50...29.50
            1000s.: (19.50...29.50)
Shutoff electromagnet:
Cut-in
>min voltage
                  : 10.0
Rated voltage
                  : 12.0
Mounting and assembly dimensions:
Designation
K
                mm: 3.2...3.4
                mm: 5.2...5.6
KF
MS
                mm: 1.6...2.0
Ya
                mm: 39.4...41.4
                mm: 45.3...58.2
Yb
Remarks:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end
Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column : PER 5,0 K Test sheet : 23.07.91 Edition replaces Calibrating oil : ISO 4113 Injection pump : VE4/11F1500R275-2 Type number : 0 460 414 092 Customer-specific information Customer : PERKINS Engine : 500.DI TEST BENCH REQUIREMENTS Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly> Opening | bar: 130.00...133.00 Pressure> Test inj. tubing : 1 680 750 073 Outside diameter : 6 x Wall>thickness : 2 mm: 450 x Length> Start of delivery mm: 0.50 Prestroke > (from BDC): +-0,02(0,04) Start of delivery block Piston stroke mm: 1.42 mm: +-0.02(0.06): A Outlet > Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 1100

Volt: 12

Setting value mm: 2,1...2,5

electromagnet>Volt: 12 Supply-pump pressure 1/min: 1100 Speed Setting value bar: 5.30...5.90 KSB/AFB valve Volt: 12 Shutoff electromagnet>Volt: 12 Full-load del. w/out charge press.: Speed 1/min: 600 Del. quantity cm3/ 1000s.: 20.50...21.50 > 11 KSB/AFB valve > Volt: 12 Shutoff electromagnet>Volt: 12 Dispersion cm3/: 3,5 1000s.: -Low-idle speed regulation Speed 1/min: 300 Del. quantity cm3/ 1000s.: 10.00...14.00 KSB/AFB Volt: 12 valve Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 3.0 1000s.: -Full-load speed regulation 1/min: 1575 Speed Del. quantity cm3/ 1000s.: 11.00...21.00 KSB/AFB > Volt: 12 valve Shutoff electromagnet>Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: -1000s.: 60.0 mind> KSB/AFB > Volt: 12 Valve Shutoff electromagnet>Volt: 12 Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

D18

Speed

AFB/AFB

Shutoff

>

valve

	1.403.80	‡	electromagnet>Volt:	
> mm: KSB/AFB	-	‡	Overflow quantity at	t overflow valve
<pre>valve &gt; Volt:</pre>	-	+	1st speed 1/min:	600
electromagnet>Volt:	12	1	KSB/AFB	
2nd speed 1/min:		1	valve > Volt:	12
	0.401.20	1	Shutoff	, _
	(0.101.50)	1	electromagnet>Volt:	12
KSB/AFB	(6.101.50)	T	Overflow	41.7083.40
	43	T		
<pre>valve &gt; Volt:</pre>	12	+	quantity> cm3/10s:	
Shutoff		+	2nd speed 1/min:	1450
electromagnet>Volt:	12	+	KSB/AFB	
3rd speed 1/min:		+	valve > Volt:	12
TD travel mm:	2.102.50	+	Shutoff	
> mm:	(1.603.00)	+	electromagnet>Volt:	12
KSB/AFB		+	Overflow :	55.60139.00
<pre>valve &gt; Volt:</pre>	12	1	quantity> cm3/10s:	
Shutoff		1	quarter ty: one root	(10.00130.00)
electromagnet>Volt:	12	1	Delivery-quant. and	hraakayay chan
		T	becivery quart. and	Dieakaway Chai
4th speed 1/min:		T		
	3.404.20	+		4.55
	(3.104.50)	+	1st speed 1/min:	1650
KSB/AFB		+	KSB/AFB	
<pre>valve &gt; Volt:</pre>	12	+	valve > Volt:	12
Shutoff		+	Shutoff	
electromagnet>Volt:	12	+	electromagnet>Volt:	12
5th speed 1/min:		1	Del. quantity cm3/:	
	3.704.50	Ţ	> 1000s.:	
> mm:	(3.404.80)	L	2nd speed 1/min:	
	(3.404.60)	T	KSB/AFB	1000
KSB/AFB	40	Ť		43
<pre>valve &gt; Volt:</pre>	12	+	valve > Volt:	12
Shutoff		†	Shutoff	
electromagnet>Volt:	12	+	electromagnet Volt:	
		+	Del. quantity cm3/:	
Supply-pump pressure	e characteristic:	+	> 1000s.:	_
		+	3rd speed 1/min:	1575
1st speed 1/min:	800	+	KSB/AFB	
Supply-pump		1	<pre>valve &gt; Volt:</pre>	12
pressure> bar:	4.104.70	1	Shutoff	
> bar:		1	electromagnet>Volt:	10
KSB/AFB		Ţ	Del. quantity cm3/:	
	13	T		
valve > Volt:	12	T		(10.0022.00)
Shutoff	40	†	4th speed 1/min:	1450
electromagnet>Volt:		+	KSB/AFB	
2nd speed 1/min:	1100	+	valve > Volt:	12
Supply-pump		+	Shutoff	
pressure> bar:	5.305.90	+	electromagnet>Volt:	12
> bar:	-	+	Del. quantity cm3/:	31.0034.00
KSB/AFB		1		(29.5035.50)
valve volt:	12	1	5th speed 1/min:	
Shutoff		1	KSB/AFB	.200
	12	1	valve > Voit:	10
electromagnet>Volt:	1/50	T		16
3rd speed 1/min:	( <del>4)</del> U	T	Shutoff	10
Supply-pump	/ FO 7 40	T	electromagnet>Volt:	74 00 77 00
•	6.507.10	†	Del. quantity cm3/:	31.0034.00
> bar:	-	+		(29.5035.50)
KSB/AFB		+	6th speed 1/min:	1100
valve > Volt:	12	+	KSB/AFB	
Shutoff		+	valve > Volt:	12

Shutoff	<del>_</del>	Shutoff
electromagnet>Volt: 12	<u> </u>	electromagnet>Volt: 12
Pel managhet/vott. 72	70 70 70	Pal ====================================
Del. quantity cm3/: 30		Del. quantity cm3/: 31.0047.00
	28.5034.50) +	> 1000s.: -
7th speed 1/min: 80	00 <del> </del>	
KSB/AFB	1	2nd speed 1/min: 400
valve > Volt: 12	,	KSB/AFB
	<del>-</del>	
Shutoff	+	valve > Volt: 12
electromagnet>Volt: 12	2 ∔	Shutoff
Del. quantity cm3/: 25	5 50 28 50	electromagnet>Volt: 12
		Dal mumbible 27/2 ( 00 22 00
	24.0030.00)	Del. quantity cm3/: 6.0022.00
8th speed 1/min: 60	DO +	> 1000s.: -
KSB/AFB	1	
valve > Volt: 12	)	Shutoff electromagnet:
	- T	Shutoff etectionagnet.
Shutoff	<u> </u>	
electromagnet>Volt: 12	<u></u>	Cut-in
Del. quantity cm3/: 20		>min voltage : 10.0
	18.5023.50)	Rated voltage : 12.0
/ 10003 (1	10.5025.507	Rated Voltage : 12.0
	+	
	+	Mounting and assembly dimensions:
	1	
Electo chutoff.		Decianation
Electr. shutoff:	<b>T</b>	Designation
	+	K mm: -
1st speed 1/min: 30	00 +	KF mm: K-OT
Del. quantity cm3/: 0.		MS mm: 1.11.5
	1	
	Ť	
Shutoff	+	XK mm: 17.019.0
electromagnet>volt: -	+	XL mm: 12.916.3
KSB/AFB	1	
	T	
	,	5 1
valve > Volt: 12	2	Remarks:
	2	Remarks:
valve > Volt: 12	<del>-</del>	Remarks:
	2	Remarks:
valve > Volt: 12  Idle delivery:	+++++++++++++++++++++++++++++++++++++++	Remarks:
<pre>valve &gt; Volt: 12 Idle delivery: 1st speed 1/min: 30</pre>	+++++++++++++++++++++++++++++++++++++++	Remarks:
<pre>valve &gt; Volt: 12 Idle delivery: 1st speed 1/min: 30 &gt;KSB/AFB</pre>	po +	Remarks:
<pre>valve &gt; Volt: 12 Idle delivery: 1st speed 1/min: 30 &gt;KSB/AFB</pre>	po +	Remarks:
<pre>valve &gt; Volt: 12 Idle delivery: 1st speed   1/min: 30 &gt;KSB/AFB valve &gt; Volt: 12</pre>	po +	Remarks:
<pre>valve &gt; Volt: 12 Idle delivery:  1st speed   1/min: 30 &gt;KSB/AFB valve &gt; Volt: 12 Shutoff</pre>	00 +	Remarks:
<pre>valve &gt; Volt: 12 Idle delivery:  1st speed   1/min: 30 &gt;KSB/AFB valve &gt; Volt: 12 Shutoff electromagnet&gt;Volt: 12</pre>		Remarks:
<pre>valve &gt; Volt: 12  Idle delivery:  1st speed  1/min: 30 &gt;KSB/AFB valve &gt; Volt: 12 Shutoff electromagnet&gt;Volt: 12 Del. quantity cm3/: 10</pre>	0.0014.00	Remarks:
<pre>valve &gt; Volt: 12  Idle delivery:  1st speed  1/min: 30 &gt;KSB/AFB valve &gt; Volt: 12 Shutoff electromagnet&gt;Volt: 12 Del. quantity cm3/: 10</pre>	0.0014.00	Remarks:
<pre>valve &gt; Volt: 12 Idle delivery:  1st speed   1/min: 30 &gt;KSB/AFB valve &gt; Volt: 12 Shutoff electromagnet&gt;Volt: 12 Del. quantity cm3/: 10 &gt;</pre>	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8 2nd speed 1/min: 43  KSB/AFB	2.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12	2.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8 2nd speed 1/min: 43  KSB/AFB	2.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff	2.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.6	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Shutoff electromagnet>Volt: 12  Shutoff electromagnet>Volt: 12  Journal Speed 1/min: 35  1000s.: -  3rd speed 1/min: 35	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Shutoff electromagnet>Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB  valve > Volt: 12	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB  valve > Volt: 12  Shutoff  Volt: 12  Shutoff	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB  valve > Volt: 12  Shutoff  Volt: 12  Shutoff	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Shutoff electromagnet>Volt: 12	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 1.5	0.0014.00 3.0016.00) 30	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 1.5	0.0014.00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 1.5  > 1000s.: (0	00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 1.5  > 1000s.: (0	00	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 1.5	00	Remarks:
<pre>Valve &gt; Volt: 12  Idle delivery:  1st speed   1/min: 30 &gt;KSB/AFB valve &gt; Volt: 12 Shutoff electromagnet&gt;Volt: 12 Del. quantity cm3/: 10 &gt;</pre>	00 2 3.0014.00 3.0016.00) 30 2 00300	Remarks:
Valve > Volt: 12  Idle delivery:  1st speed 1/min: 30  >KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 10  > 1000s.: (8  2nd speed 1/min: 43  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 0.0  > 1000s.: -  3rd speed 1/min: 350  KSB/AFB  valve > Volt: 12  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 1.5  Shutoff electromagnet>Volt: 12  Del. quantity cm3/: 1.5  Automatic starting fuel  1st speed 1/min: 250	00 2 3.0014.00 3.0016.00) 30 2 00300	Remarks:
<pre>Valve &gt; Volt: 12  Idle delivery:  1st speed   1/min: 30 &gt;KSB/AFB valve &gt; Volt: 12 Shutoff electromagnet&gt;Volt: 12 Del. quantity cm3/: 10 &gt;</pre>	00 2 3.0014.00 3.0016.00) 30 2 00300 50 507.50 0.508.50)	Remarks:

Note inst. in remarks column

Test sheet Edition : 19.03.96

replaces

Calibrating oil : ISO 4113

: VE4/11F2000R663 Injection pump Type number : 0 460 414 132

Customer-specific information Customer : OTOSAN

: 2.5.DI Engine

KW: 74 Power

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 114

Opening

bar: 204.00...210.00 Pressure>

Perforated-plate

mm: 0.4 diameter>

Test inj. tubing : 1 680 750 073

Outside diameter : 6 x Wall>thickness : 2 x Length> mm: 450

Start of delivery block Piston stroke mm: 0.62 mm: +-0.05>

: B Outlet >

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Speed Charge press. hPa: 1000 mm: 2.9...3.5 Setting value

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1250 Charge press hPa: 1000

Setting value bar: 6.70...7.30

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

1/min: 800 Speed Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 41.8...42.2

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1000

Del. quantity cm3/

1000s.: 28.5...29.5

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 1000s.: (4.0)

Low-idle speed regulation

Speed 1/min: 425

Del. quantity cm3/

1000s.: 6.7...8.7

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.0 1000s.: (4.0)

Full-load speed regulation

Speed 1/min: 2200 Charge press hPa: 1000

Del. quantity cm3/

> 1000s.: 16.80...18.80

Shutoff

electromagnet>Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 60.0...100.00

mind> 1000s.: 60.0

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:	+ Charge-air pressure-setting
	+ point> hPa: 450
1st speed	+ LDA-stroke mm: 5.3
Charge press hPa: 1000	+ Shutoff
TD travel mm: 1.32.1	+ electromagnet>Volt: 12
> mm: (0.82.6)	→ Del. quantity cm3/: 34.535.5
electromagnet>Volt: 12	+ > 1000s.: -
2nd speed 1/min: 1250	+ 2nd speed 1/min: 2350
Charge press hPa: 1000	+ Charge press. hPa: 1000
TD travel mm: 2.73.3	+ Shutoff
TD travel mm: 2.73.3 mm: (2.43.6)	electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 0.003.00
electromagnet>Volt: 12	+ > 1000s.: -
·	
Charge press hPa: 1000	Charge press. hPa: 1000
TD travel mm: 4.905.70	+ Shutoff
> mm: (4.406.20)	+ electromagnet>Volt: 12
Shutoff	† Del. quantity cm3/: 16.818.8
electromagnet>Volt: 12	+ > 1000s.: (12.8022.80)
	+ 4th speed 1/min: 2150
Supply-pump pressure characteristic:	+ Charge press. hPa: 1000
	+ Shutoff
1st speed 1/min: 1000	+ electromagnet>Volt: 12
Charge press. hPa: 1000	Del. quantity cm3/: 21.5027.50
Supply-pump	+ > 1000s.: (18.5030.50)
pressure> bar: 6.206.80	+ 5th speed 1/min: 1950
Shutoff	+ Charge press. hPa: 1000
	+ Shutoff
electromagnet>Volt: 12 2nd speed   1/min: 1250	
	+ electromagnet>Volt: 12
Charge press. hPa: 1000	+ Del. quantity cm3/: 40.5042.90
Supply-pump	+ > 1000s.: (39.2044.20)
pressure> bar: 6.707.30	+ 6th speed 1/min: 1000
Shutoff	† Charge press. hPa: -
electromagnet>Volt: 12	+ Shutoff
3rd speed 1/min: 2000	<pre>+ electromagnet&gt;Volt: 12</pre>
Charge press. hPa: 1000	+ Del. quantity cm3/: 28.5029.50
Supply-pump	+ > 1000s.: (26.5031.50)
pressure> bar: 8.208.80	† 7th speed 1/min: 800
Shutoff	+ Charge press. hPa: 1000
electromagnet>Volt: 12	+ Shutoff
e court anagrate voctor 12	electromagnet>Volt: 12
Overflow quantity at overflow valve	Del. quantity cm3/: 41.8042.20
over row quarterly at over row valve	+ > 1000s.: (39.0045.00)
1st speed 1/min: 800	1 7 70000 (37.0043.007
	I
Charge press. hPa: 1000	T
Shutoff	The state of the section
electromagnet>Volt: 12	† Electr. shutoff:
Overflow : 88.80133.30	†
quantity> cm3/10s: (73.80148.40)	+ 1st speed 1/min: 500
2nd speed 1/min: 1950	+ Del. quantity cm3/: 0.003.00
Charge press. hPa: 1000	+ > 1000s.: -
Shutoff	+ Shutoff
electromagnet>Volt: 12	<pre>+ electromagnet&gt;volt: -</pre>
Overflow : 111.1194.40	+
quantity> cm3/10s: (96.10209.40)	Idle delivery:
Delivery-quant. and breakaway char.:	† 1st speed 1/min: 425
but, toty quarter and broadway onar in	Shutoff
	+ electromagnet>Voit: 12
1st speed 1/min: 1000	Del. quantity c
136 30000 1/111111 1000	1 Dec. quarterty 6 3.10.1.20.10

1000s.: (3.70...11.70) Automatic starting fuel delivery: 1st speed 1/min: 480 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 20.00...40.00 1000s.: -2nd speed 1/min: 300 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 48.0...78.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 2.7...2.9 K KF mm: -MS1 mm: 1.7...2.0 mm: KSB 10.0 FH mm: 2.5 TLA-E

mm: 42.8...45.8 Ya

mm: 59.5...71.5 Yb

Remarks:

: FB - KDEP 1151

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Timing-device travel Note inst. in remarks column 1/min: 1100 Speed Charge press. hPa: 1100 Test sheet Setting value mm: 0.80...1.20 : CUM Edition : 18.03.96 AFB/AFB : 17.05.89 valve > Volt: 12 replaces Calibrating oil : ISO 4113 Shutoff electromagnet>Volt: 12 : VE4/12F1250R301 Injection pump Type number : 0 460 424 041 Supply-pump pressure Customer Part-No.: 3 911 240 1/min: 850 Speed Customer-specific information Charge press hPa: 1100 Setting value bar: 4.50...5.10 Customer : CDC KSB/AFB Engine : 4BTA 390 A valve Volt: 12 Shutoff Power KW: 88 electromagnet>Volt: 12 Speed 1/min: 2500 Full-load del. with charge press.: TEST BENCH REQUIREMENTS Speed 1/min: 850 Overflow restricti: 1 463 456 303 Charge press. hPa: 1100 Del. quantity cm3/ 1000s.: 84.5...85.5 Calibrating-oil return>temp. > °C KSB/AFB with>thermometer> : 40.00...48.00 valve > Volt: 12 Electronically> : 42.00...50.00 Shutoff electromagnet>Volt: 12 Inlet press., bar : 0.30...0.40 cm3/: 4.0 Dispersion 1000s.: (4.5) Calibrating nozzle-holder : 1 688 901 027 Full-load del. w/out charge press.: assembly> 1/min: 550 Openina Speed bar: 250.00...253.00 Pressure> Del. quantity cm3/ 1000s.: 56.50...57.50 > KSB/AFB Perforated-plate diameter> mm: 0.5 valve > Volt: 12 Shutoff electromagnet>Volt: 12 Test inj. tubing : 1 680 750 017 Low-idle speed regulation Outside diameter : 6 x Wall>thickness : 2 Speed 1/min: 375 hPa: x Length> mm: 840 Charge press Del. quantity cm3/ Start of delivery 1000s.: 9.00...13.0 > KSB/AFB Prestroke mm: 0.3 (from BDC): +-0.02(0.04)> Volt: 12 valve Shutoff Start of delivery block electromagnet>Volt: 12 Del. quantity cm3/: 5.5 > 1000s.: (7.0) Piston stroke mm: 1.25 mm: +-0.02(0.04)Outlet > Full-load speed regulation Injection-pump setting values

11

1/min: 1340

Speed

Test specifications in parentheses

Charge press hPa: 1100 Del. quantity cm3/	+ Supply-pump + pressure> bar: 2.903.50
> 1000s.: 62.068.0	+ KSB/AFB
KSB/AFB valve > Volt: 12	<pre>+ valve &gt; Volt: 12 + Shutoff</pre>
Shutoff	electromagnet>Volt: 12
electromagnet>Volt: 12	+ 2nd speed 1/min: 850
-	+ Charge press. hPa: 1100
Start:	+ Supply-pump
Speed 1/min: 100	+ pressure> bar: 4.505.10 + KSB/AFB
Charge press hPa: -	+ valve > Volt: 12
Del. quantity cm3/: -	Shutoff
mind> 1000s.: 70.00	+ electromagnet>Volt: 12
KSB/AFB Valve > Volt: 12	+ 3rd speed 1/min: 1100 + Charge press. hPa: 1100
Shutoff	+ Supply-pump
electromagnet>Volt: 12	+ pressure> bar: 5.506.10
-	+ KSB/AFB
Inspection-pump test specifications	+ valve > Volt: 12
Test specifications in parentheses	+ Shutoff
Timing-device characteristic:	+ electromagnet>Volt: 12 + 4th speed 1/min: 1250
Thirting device character total	Charge press. hPa: 1100
1st speed 1/min: 400	+ Supply-pump
Charge press hPa: -	+ pressure> bar: 6.16.7
TD travel mm: 2.503.50	+ KSB/AFB + valve > Volt: 12
> mm: - KSB/AFB	<pre>+ valve &gt; Volt: 12 + Shutoff</pre>
valve > Volt: -	+ electromagnet>Volt: 12
electromagnet>Volt: 12	+
2nd speed 1/min: 1000	+ Overflow quantity at overflow valve
Charge press hPa: 1100	124 - 224 - 100
TD travel mm: 0.21.0 > mm: (0.01.3)	+ 1st speed 1/min: 500 + Charge press. hPa: -
KSB/AFB	+ KSB/AFB
valve > Volt: 12	+ valve > Volt: 12
Shutoff	+ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
3rd speed 1/min: 1100 Charge press hPa: 1100	+ Overflow : 4183 + quantity> cm3/10s: (2698)
TD travel mm: 0.801.20	+ 2nd speed 1/min: 1250
> mm: (0.301.70)	Charge press. hPa: 1100
KSB/AFB	+ KSB/AFB
valve > Volt: 12	+ valve > Volt: 12 + Shutoff
Shutoff electromagnet>Volt: 12	electromagnet>Volt: 12
4th speed 1/min: 1250	+ Overflow : 55138
Charge press hPa: 1100	+ quantity> cm3/10s: (40153)
TD travel mm: 1.42.2	†
> mm: (1.12.5)	Delivery-quant. and breakaway char.:
KSB/AFB valve > Volt: 12	Ī
Shutoff	1st speed 1/min: 700
electromagnet>Volt: 12	+ Charge-air pressure-setting
_	+ point> hPa: 600
Supply-pump pressure characteristic:	+ LDA-stroke mm: 6.5
1st speed 1/min: 550	+ KSB/AFB + valve > Volt: 12
Charge press. hPa: 1100	Shutoff

electromagnet>Volt:	12	+	Charge press. hPa:	1100
Del. quantity cm3/:		+	KSB/AFB	
> 1000s.:	(70.078.0)	1	<pre>valve &gt; Volt:</pre>	12
2nd speed 1/min:	1550	+	Shutoff	
Charge press. hPa:		1	electromagnet>Volt:	12
KSB/AFB	.,	1	Del. quantity cm3/:	97.0105.0
valve > Volt:	12	1	> 1000s.:	
Shutoff	, 2	1	10th speed 1/min:	
electromagnet Volt:	12	1	Charge press. hPa:	
Del. quantity cm3/:		Ι	KSB/AFB	
> 1000s.:	-	I	valve > Volt:	12
3rd speed 1/min:		T	Shutoff	14
Charge press. hPa:		T		10
KSB/AFB	1100	Ť	electromagnet>Volt:	
	10	<b>†</b>	Del. quantity cm3/:	
valve > Volt:	12	†	> 1000s.:	(53.061.0)
Shutoff	40	†		
electromagnet>Volt:		†		
Del. quantity cm3/:		+	Mech. shutoff:	
> 1000s.:		+		
4th speed 1/min:		+	1st speed 1/min:	
Charge press. hPa:	1100	+	Del. quantity cm3/:	0.003.00
KSB/AFB		+	> 1000s.:	-
<pre>valve &gt; Volt:</pre>	12	+	Shutoff	
Shutoff		+	electromagnet>volt:	12
electromagnet>Volt:	12	+	KSB/AFB	
Del. quantity cm3/:	15.055.0	+	<pre>valve &gt; Volt:</pre>	12
> 1000s.:		+		
5th speed 1/min:	1340	1	Electr. shutoff:	
Charge press. hPa:		1		
KSB/AFB		1	1st speed 1/min:	375
valve > Volt:	12	1	Del. quantity cm3/:	
Shutoff	· <del>-</del>	1	> 1000s.:	
electromagnet>Volt:	12	1	Shutoff	
Del. quantity cm3/:		1	electromagnet>volt:	
	(59.071.0)	1	KSB/AFB	
6th speed 1/min:		1	valve > Volt:	12
Charge press. hPa:		1	vacve > vocc.	12
KSB/AFB	1100	Ι	Idle delivery:	
valve > Volt:	12	Ι	idle delivery.	
Shutoff	12	T	1st speed 1/min:	775
electromagnet>Volt:	12	T	>KSB/AFB	373
		T		10
Del. quantity cm3/:		<b>T</b>	<pre>valve &gt; Volt:</pre>	12
	(77.583.5)	†	Shutoff	10
7th speed 1/min:		Ť	electromagnet>Volt:	
Charge press. hPa:	1100	†	Del. quantity cm3/:	
KSB/AFB	12	†		(6.016.0)
valve > Volt:	12	†	2nd speed 1/min:	450
Shutoff	40	†	KSB/AFB	4.5
electromagnet>Volt:		†	valve > Volt:	12
Del. quantity cm3/:		+	Shutoff	• •
	(79.586.5)	+	electromagnet>Volt:	
8th speed 1/min:		+	Del. quantity cm3/:	
Charge press. hPa:	1100	+	> 1000s.:	-
KSB/AFB		+		
valve > Volt:	12	+	Automatic starting 1	fuel delivery:
Shutoff		+		
electromagnet>Volt:		+	1st speed 1/min:	240
Del. quantity cm3/:	84.585.5	+	KSB/AFB	
	(82.088.0)	+	<pre>valve &gt; Volt:</pre>	12
9th speed 1/min:		+	Shutoff	

electromagnet>Volt: 12 Del. quantity cm3/: 80.0.... > 1000s.: -

2nd speed 1/min: 360

KSB/AFB

> Volt: 12 valve

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: ...80.0

1000s.: -

# Shutoff electromagnet:

Cut-in

>min voltage : 10.0 Rated voltage : 12.0

# Mounting and assembly dimensions:

# Designation

mm: -K KF mm: 5.2...5.4 mm: 1.2...1.5 MS1 mm: 3.5 SVS max. mm: 6.5 LDA stroke mm: 18.8...20.8 XK mm: 11.8...15.2 XL

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control

lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : HEP 3,7 A2 Edition : 24.07.91 replaces Calibrating oil : ISO 4113 : VE4/12F1300R314 Injection pump Type number : 0 460 424 044 Customer Part-No. : 403 053 607 Customer-specific information Customer : HERCULES Engine : DT -3.7L IND. KW: 58 Power 1/min: 2600 Speed TEST BENCH REQUIREMENTS Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 027 assembly> Opening bar: 250.00...253.00 Pressure> Perforated-plate mm: 0.5 diameter> Test inj. tubing : 1 680 750 017 Outside diameter : 6 x Wall>thickness : 2 x Length> mm: 840 Start of delivery Prestroke mm: 0.3 (from BDC): +-0.02(0.04)Indicator setting Piston stroke> mm: 1.0 Outlet> Injection-pump setting values Test specifications in parentheses

1/min: 900 Setting value mm: 1.60...2.00 Shutoff electromagnet>Volt: 12 Supply-pump pressure 1/min: 900 Speed Setting value bar: 4.10...4.70 Shutoff electromagnet>Volt: 12 Full-load del. w/out charge press.: 1/min: 900 Del. quantity cm3/ > 1000s.: 70.50...71.50 Shutoff electromagnet>Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5) Low-idle speed regulation 1/min: 250 Speed Del. quantity cm3/ 1000s.: 2.00...4.00 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 5.5 1000s.: (7.0) Start: Speed 1/min: 100 Del. quantity cm3/: -1000s.: 50.00 mind> Shutoff electromagnet>Volt: 12 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1st speed 1/min: 750 mm: 0.60...1.40 TD travel mm: (0.30...1.70) electromagnet>Volt: 12 1/min: 900 2nd speed TD travel mm: 1.60...2.00 > mm: (1.10...2.50) Shutoff electromagnet>Volt: 12 mm: (2.40...3.80) Shutoff electromagnet>Volt: 12

Timing-device travel

	+	6th speed 1/min: 1100
Supply-pump pressur	e characteristic: +	Shutoff
	+	electromagnet>Volt: 12
1st speed 1/min:	500 +	Del. quantity cm3/: 70.0072.00
Supply-pump	+	> 1000s.: (67.5074.50)
	2.503.10	7th speed 1/min: 900
Shutoff	1	Shutoff
electromagnet>Volt:	12	electromagnet>Volt: 12
2nd speed 1/min:		Del. quantity cm3/: 70.5071.50
	300 T	> 1000s · (68 00 74 00)
Supply-pump	/ 10 / 70	> 1000s.: (68.0074.00)
•	4.104.70	
Shutoff	<u>,                                     </u>	
electromagnet>Volt:		Mech. shutoff:
3rd speed 1/min:	1250 +	
Supply-pump	+	1st speed
pressure> bar:	5.506.10	Del. quantity cm3/: 0.003.00
Shutoff	+	> 1000s.: -
electromagnet>Volt:	12	Shutoff
o to the small form	1	electromagnet>volt: 12
Overflow quantity a	t overflow valve	cteteromagnets vote. The
over tow quarterty a	c over row valve	Electr. shutoff:
1-+ 1/	F00	etecti. Silutori.
1st speed 1/min:	300 +	1-4 1 1/ 250
Shutoff		1st speed 1/min: 250
electromagnet>Volt:		Del. quantity cm3/: 0.003.00
	4183	> 1000s.: -
quantity> cm3/10s:	(2698) +	Shutoff
2nd speed 1/min:	1300 +	electromagnet>volt: ~
Shutoff	+	-
electromagnet>Volt:	12	Damper set qty.:
Overflow :	55138	
quantity> cm3/10s:		Automatic starting fuel delivery:
quarterty> cm3/103.	[	Automatic starting fuel decivery.
Delivery-quant. and	hnaskauay chan	1st speed 1/min: 130
betivery quant. and	Dreakaway char	Shutoff
	Ť	
	1	electromagnet>Volt: 12
1st speed 1/min:	1460 +	Del. quantity cm3/: 50.00110.00
Shutoff	+	> 1000s.: -
electromagnet>Volt:		
Del. quantity cm3/:	0.003.00	2nd speed 1/min: 250
> 1000s.:		Shutoff
2nd speed 1/min:		electromagnet>Volt: 12
Shutoff	1	Del. quantity cm3/: 30.0090.00
electromagnet Volt:	12	> 1000s.: -
Del. quantity cm3/:		1000011
> 1000s.:	15.0055.00	Shutoff electromagnet:
3rd speed 1/min:		Shutorr etettromagnet.
Charles & &	1440	
Shutoff	1440	Cut-in
electromagnet>Volt:	12	Cut-in >min voltage : 10.0
<pre>electromagnet&gt;Volt: Del. quantity cm3/:</pre>	12 0.0015.0	Cut-in
<pre>electromagnet&gt;Volt: Del. quantity cm3/: &gt; 1000s.:</pre>	1440 12 0.0015.0	Cut-in >min voltage : 10.0 Rated voltage : 12.0
<pre>electromagnet&gt;Volt: Del. quantity cm3/: &gt;</pre>	1440 12 0.0015.0	Cut-in >min voltage : 10.0
<pre>electromagnet&gt;Volt: Del. quantity cm3/: &gt; 1000s.:</pre>	1440 12 0.0015.0	Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions:
<pre>electromagnet&gt;Volt: Del. quantity cm3/: &gt;</pre>	1440 12 0.0015.0 - 1345	Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions:
<pre>electromagnet&gt;Volt: Del. quantity cm3/: &gt;</pre>	1440 12 0.0015.0 - 1345 12	Cut-in >min voltage : 10.0 Rated voltage : 12.0
electromagnet>Volt: Del. quantity cm3/: > 1000s.: 4th speed 1/min: Shutoff electromagnet>Volt: Del. quantity cm3/:	1440 12 0.0015.0 - 1345 12 54.0060.00	Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K mm: -
electromagnet>Volt: Del. quantity cm3/: > 1000s.: 4th speed 1/min: Shutoff electromagnet>Volt: Del. quantity cm3/: > 1000s.:	1440 12 0.0015.0 - 1345 12 54.0060.00 (51.0063.00)	Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K
electromagnet>Volt: Del. quantity cm3/: > 1000s.: 4th speed 1/min: Shutoff electromagnet>Volt: Del. quantity cm3/: > 1000s.: 5th speed 1/min:	1440 12 0.0015.0 - 1345 12 54.0060.00 (51.0063.00)	Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K
electromagnet>Volt: Del. quantity cm3/: > 1000s.: 4th speed 1/min: Shutoff electromagnet>Volt: Del. quantity cm3/: > 1000s.: 5th speed 1/min: Shutoff	1440 12 0.0015.0 - 1345 12 54.0060.00 (51.0063.00) 1300	Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K
electromagnet>Volt: Del. quantity cm3/: > 1000s.: 4th speed 1/min: Shutoff electromagnet>Volt: Del. quantity cm3/: > 1000s.: 5th speed 1/min: Shutoff electromagnet>Volt:	1440 12 0.0015.0 - 1345 12 54.0060.00 (51.0063.00) 1300	Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K
electromagnet>Volt: Del. quantity cm3/: > 1000s.: 4th speed 1/min: Shutoff electromagnet>Volt: Del. quantity cm3/: > 1000s.: 5th speed 1/min: Shutoff electromagnet>Volt: Del. quantity cm3/:	1440 12 0.0015.0 - 1345 12 54.0060.00 (51.0063.00) 1300	Cut-in >min voltage : 10.0 Rated voltage : 12.0  Mounting and assembly dimensions:  Designation K

Remarks:

Supply-pump pressure BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min: 1500 Note inst. in remarks column Setting value bar: 6.30...6.90 KSB/AFB Test sheet : VW valve Volt: 12 Edition : 15.03.96 Shutoff replaces electromagnet>Volt: 12 Calibrating oil : ISO-4113 Full-load del. w/out charge press.: : VE4/8F2400R677 Injection pump Type number : 0 460 484 108 Speed 1/min: 1500 Del. quantity cm3/ Customer Part-No. : 1000s.: 31.5...32.5 > KSB/AFB Customer-specific information valve > Volt: 12 Customer : VW Shutoff electromagnet>Volt: 12 : 1.6 L cm3/: 2.5 Engine Dispersion 1000s.: (3.0) TEST BENCH REQUIREMENTS Low-idle speed regulation Overflow restricti: 1 463 456 303 beed 1/min: 400 Calibrating-oil Del. quantity cm3/ return>temp. > °C 1000s.: 13.0...17.0 with>thermometer> : 40.00...48.00 KSB/AFB Electronically> : 42.00...50.00 > Volt: 12 valve Shutoff Inlet press., bar : 0.30...0.40 electromagnet>Volt: 12 Del. quantity cm3/: 2.5 1000s.: (3.5) Calibrating nozzle-holder : 1 688 901 000 assembly> Full-load speed regulation Opening 1/min: 2550 Pressure> bar: 144.00...150.00 Speed Del. quantity cm3/ 1000s.: 16.0...22.0 Test inj. tubing : 1 680 750 017 KSB/AFB > Volt: 12 valve Outside diameter : 6.00 x Wall>thickness : 2.00 Shutoff electromagnet>Volt: 12 mm: 840 x Length> Start: Start of delivery Speed 1/min: 100 mm: -Prestroke (from BDC): -Del. quantity cm3/: 31.5...61.5 1000s.: 31.5 mind> Injection-pump setting values KSB/AFB > Volt: 12 Test specifications in parentheses Valve Shutoff Timing-device travel electromagnet>Volt: 12 Speed 1/min: 1500 Inspection-pump test specifications Setting value mm: 3.40...3.80 Test specifications in parentheses AFB/AFB Timing-device characteristic: Volt: 12 valve Shutoff

11

1/min: 600

mm: 1.20...2.40

1st speed

TD travel

electromagnet>Volt: 12

> mm:	(0.802.80)	+	KSB/AFB	
KSB/AFB		1	valve > Volt:	12
valve > Volt:	_	1	Shutoff	
electromagnet>Volt:		1	electromagnet>Volt:	12
2nd speed 1/min:		T	Overflow :	55 AN 130 NN
	1.402.20	T		
		Ť	quantity> cm3/10s:	(40.00134.00)
	(1.102.50)	†		1 1
KSB/AFB	13	†	Delivery-quant. and	breakaway char.:
<pre>valve &gt; Volt:</pre>	12	+		
Shutoff		+		
electromagnet>Volt:		+	1st speed 1/min:	2800
3rd speed 1/min:		+	KSB/AFB	
	3.403.80	+	valve > Volt:	12
> mm:	(3.004.20)	+	Shutoff	
KSB/AFB		+	electromagnet>Volt:	12
<pre>valve &gt; Volt:</pre>	12	+	Del. quantity cm3/:	0.003.00
Shutoff		1		(0.003.00)
electromagnet>Volt:	12	1	2nd speed 1/min:	
4th speed 1/min:		1	KSB/AFB	
	6.27.0	1	valve > Volt:	12
	(5.97.3)	1	Shutoff	14
KSB/AFB	(3.7)	1	electromagnet Volt:	12
valve > Volt:	12	T	Del. quantity cm3/:	
	12	T		(3.013.0)
Shutoff	43	Ť		
electromagnet>Volt:	12	†	3rd speed 1/min:	2000
		†	KSB/AFB	40
Supply-pump pressure	e characteristic:	+	<pre>valve &gt; Volt:</pre>	12
		+	Shutoff	
1st speed 1/min:	600	+	electromagnet>Volt:	
Supply-pump		+	Del. quantity cm3/:	
pressure> bar:	3.604.20	+	> 1000s.:	(16.024.0)
KSB/AFB		+	4th speed 1/min:	2400
<pre>valve &gt; Volt:</pre>	12	1	KSB/AFB	
Shutoff		1	valve > Volt:	12
electromagnet>Volt:	12	+	Shutoff	
2nd speed 1/min:	1500	1	electromagnet>Volt:	12
Supply-pump		1	Del. quantity cm3/:	
pressure> bar:	6.306.90	1		(27.031.0)
KSB/AFB	0.300.70	1	5th speed 1/min:	
valve > Volt:	12	1	KSB/AFB	1300
Shutoff		1	valve > Volt:	12
electromagnet>Volt:	12	Ι	Shutoff	16
		Ţ	electromagnet>Volt:	12
	2400	T	Del. quantity cm3/:	
Supply-pump	0.00	T		
	9.009.60	Ť		(30.034.0)
KSB/AFB	40	†	6th speed 1/min:	<b>600</b>
valve > Volt:	12	†	KSB/AFB	40
Shutoff		†	valve > Volt:	12
electromagnet>Volt:	12	+	Shutoff	
		t	electromagnet>Volt:	
Overflow quantity at	t overflow valve	+	Del. quantity cm3/:	
		+	> 1000s.:	(22.528.5)
1st speed 1/min:	600	+		
KSB/AFB		+		
<pre>valve &gt; Volt:</pre>	12	+		
Shutoff		+	Electr. shutoff:	
electromagnet>Volt:	12	+		
	44.4088.80	+	1st speed 1/min:	475
quantity> cm3/10s:		†	Del. quantity cm3/:	
2nd speed 1/min:		1		(0.003.00)

Shutoff electromagnet>volt: -KSB/AFB > Volt: 12 valve Idle delivery: 1/min: 400 1st speed >KSB/AFB valve Volt: 12 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 13.0...17.0 1000s.: (9.5...20.5) cm3/: 2.5 Dispersion 1000s.: (3.5) 1/min: 300 2nd speed KSB/AFB > Volt: 12 valve Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 24.0...30.0 1000s.: (21.5...32.5) 3rd speed 1/min: 1000 KSB/AFB valve > Volt: 12 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.0...3.0 1000s.: -Automatic starting fuel delivery: 1/min: 350 1st speed KSB/AFB > Volt: 12 valve Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 32.0...42.0 1000s.: -1/min: 500 2nd speed KSB/AFB > Volt: 12 valve Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 19.5...29.5 1000s.: -1/min: 100 4th speed KSB/AFB valve > Volt: 12 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 32.50...62.50 1000s.: -Shutoff electromagnet: Cut-in

>min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4 KF mm: 5.2...5.6 MS mm: 1.6...2.0 Ya mm: 39.4...41.4 Yb mm: 45.8...58.7

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.95 Test oil : ISO 4113

Part no. : 0 460 413 001 Pump designation : VE3/11F1250L163

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8035.05.200
Power KW : 42.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 020

Opening pressure

bar : 172 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2Tolerance mm : +-0,02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm : 2.7 Tolerance mm : 0.2 Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 800

Setting hPa : 4.1
Tolerance hPa : 0.3
Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

2.0

20.0

Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 69.0
Tolerance
cm3/1000 strokes : 0.5
Spread

cm3/1000 strokes : 3.5 Shutoff solenoid

Volt :

IDLE SETTING

Rated speed rpm : 350 Del. quantity

cm3/1000 strokes : 23.0 Tolerance

cm3/1000 strokes : Shutoff solenoid

Volt : 12 Spread

cm3/1000 strokes : 3.5 Check tolerance

cm3/1000s. : 3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1400

Del. quantity cm3/1000 strokes :

Tolerance cm3/1000 strokes : 2.0

Shutoff solenoid		+		
Volt	: 12		ck_tolerance	
			/10s :	41.6
STARTING FUEL DEL	.IVERY	4	toff solenoid	
		+ Vol1	t :	12
Rated speed rpm	: 100	+		
Del. quantity			ed speed rpm :	500
cm3/1000 strokes	: 105.0		rflow quantity	
Tolerance			/10s :	63.8
cm3/1000 strokes	: 25.0		erance	
Shutoff solenoid		+ ccm/	/10s :	22.2
Volt	: 12	+ .		
			ck_tolerance	
			/10s :	22.2
			toff solenoid	
		† Volt	t :	12
		+		
INJECTION-PUMP TE	ST SPECIFICATION	S + DEL1	IVERY AND BREAKA	WAY CHARACTERISTIC
		+ _		
TIMING DEVICE CHA	RACTERISTIC			1400
			. quantity	
Rated speed rpm	: 1200		/1000 strokes :	20.0
Tolerance mm	; 0.4		erance	
Check			/1000 strokes :	2.0
tolerance mm	: 0.7		ck tolerance	
Shutoff solenoid	4.0		/1000s. :	6.0
Volt	: 12	•	toff solenoid	4-
		+ Volt	:	12
Rated speed rpm	: 600	t <u> </u>		4700
<b></b>	4 2			1350
SV travel mm	: 1.2	+ Del.	quantity	50.0
Tolerance mm	: 0.4	1	/1000 strokes :	50.0
Check			erance	0.0
tolerance mm	: 0.7		/1000 strokes :	8.0
Shutoff solenoid	42		k tolerance	40.0
Volt	: 12		/1000s. :	10.0
CURRY PUMP PRESS	LIDE CHADACTEDICT	ţ	off solenoid	12
SUPPLY PUMP PRESS	OKE CHARACTERIST	IC + Volt		12
Datad amond nam	: 1200	T Poto	ed speed rpm :	1460
Rated speed rpm	: 1200		ed speed rpm : quantity	1460
Supply pomp	: 5.8		1000 strokes :	1.5
pressure bar Tolerance hPa	: 0.3		erance	1.5
Shutoff solenoid	. 0.5		1000 strokes :	1.5
Volt	: 12		ck tolerance	1.5
VOCE	• 12		1000s. :	1.5
Rated speed rpm	: 500		off solenoid	1.5
Supply pomp	. 500	T Volt		12
pressure bar	: 2.8	I	•	12
Tolerance hPa	: 0.3	⊥ Rate	ed speed rpm :	1250
Shutoff solenoid	. 0.5		quantity	1230
Volt	: 12		1000 strokes :	70.5
VOCE	. , , ,	1	rance	(6.9
OVERFLOW QUANTITY			1000 strokes :	1.5
OFFILIEDM ADVISETLE			k tolerance	1
Rated speed rpm	: 1250		1000s. :	3.5
Overflow quantity			off solenoid	÷ • •
ccm/10s	: 97.2	+ Volt		12
Tolerance	· · · · · · · ·	1	•	· <del>-</del>
ccm/10s	: 41.6	↓ Rate	ed speed rpm :	500
		,	e per extensión de la company	

Del. quantity		+		
cm3/1000 strokes Tolerance	: 60.5	‡		
cm3/1000 strokes Check tolerance	: 1.5	‡		
cm3/1000s. Shutoff solenoid	: 3.5	‡	START TRANSITION	
Volt	: 12	<u> </u>	Rated speed rpm Del. quantity	: 250
Rated speed rpm Del. quantity	: 750	1	cm3/1000 strokes Tolerance	: 45.0
cm3/1000 strokes Tolerance	: 69.0	‡	cm3/1000 strokes Shutoff solenoid	: 20.0
cm3/1000 strokes Check tolerance	: 0.5	‡	Volt	: 12
cm3/1000s. Shutoff solenoid	: 3.0	‡	Rated speed rpm	: 150
Volt	: 12	1	Del. quantity cm3/1000 strokes	
		‡	Tolerance cm3/1000 strokes	: 25.0
ELECTR. SHUTOFF CONTROL LEVER, ID	DLE STOP	+	Shutoff solenoid Volt	: 12
Rated speed rpm Del. quantity	: 350	1	ASSEMBLY AND AD III	STMENT DIMENSIONS
cm3/1000 strokes Tolerance	: 1.5	$\frac{1}{2}$	Dimension K mm	· _
cm3/1000 strokes Check tolerance	: 1.5	<u> </u>	Dimension KF mm Tolerance mm	: 5,2 : +-0,2
cm3/1000s. Spread	: 1.5	İ	Dimension MS mm Tolerance mm	: 1,6 : +-0,2
cm3/1000 strokes	: 5.0	<u> </u>	TOCCT WITH THE	
FULL-LOAD STOP CO	NTROL LEVER	1	CONTROL LEVER POS	TTION
Rated speed rpm Del. quantity	: 350	<u> </u>	SET	112011
cm3/1000 strokes	: 1.5	<u> </u>	Control lever	
cm3/1000 strokes Spread	: 1.5	+	position YA mm	: 37,939,9
cm3/1000 strokes Check tolerance	: 5.0	‡	Control lever position YB mm	: 44,549,5
cm3/1000s. Spread	: 1.5	<u> </u>	,	
cm3/1000 strokes	: 5.0	+		
IDLE DELIVERY		<u> </u>	End of test-speci	fication sheet
Rated speed rpm Del. quantity	: 475	<u> </u>		
cm3/1000 strokes Tolerance	: 1.5	1		
cm3/1000 strokes Check tolerance	: 1.5	<del> </del>		
cm3/1000s. Shutoff solenoid	: 1.5	<u> </u>		
Volt	: 12	+		

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 01,04.95 : ISO 4113

Part no.

: 0 460 413 002 Pump designation: VE3/11F1250L163-1

Customer-spec. information Customer

: IVECO-FIAT : 8035.06.200

Motor Power KW

38.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

restriction mm

0.55

Inlet press. bar :

0.35

Tolerance bar

0.05

Test nozzle holde

assembly

: 1 688 901 020

Opening pressure

bar

172

Tolerance bar

3

Test lines

: 1 680 750 000

Outside diameter :

6.00

x inside diameter :

2.00

x length mm

840

:

REMARKS

BEGINNING OF DELIVERY

Prestroke

E09

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

tolerance mm

: +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1000

Setting mm 3.0 Tolerance mm 0.2

Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000

Setting hPa 6.0 Tolerance hPa 0.3

Shutoff solenoid Volt

12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 750

Del. quantity

cm3/1000 strokes : 65.5

Tolerance

cm3/1000 strokes : 0.5

Spread

3.5 cm3/1000 strokes :

Shutoff solenoid

12 Volt

IDLE SETTING

400 Rated speed rpm

Del. quantity

cm3/1000 strokes : 17.5

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

Spread

cm3/1000 strokes : 3.5

Check tolerance

3.5

cm3/1000s.

FULL-LOAD SPEED REGULATION

Rated speed rpm

1350

Del. quantity

cm3/1000 strokes :

45.0

Tolerance		+	Tolerance			
cm3/1000 strokes	: 2.0	+	ccm/10s	:	41.6	
Shutoff solenoid	4.5	ŧ				
Volt	: 12	+	Check tolerance			
		+	ccm/10s	:	41.6	
STARTING FUEL DEL	.IVERY	+	Shutoff solenoid			
	400	†	Volt	:	12	
Rated speed rpm	: 100	†			500	
Del. quantity	405.0	+	Rated speed rpm		500	
cm3/1000 strokes	: 105.0	†	Overflow quantity		/7.0	
Tolerance	. 25.0	†	ccm/10s	:	63.8	
cm3/1000 strokes	: 25.0	†	Tolerance	_	22.2	
Shutoff solenoid Volt	: 12	†	ccm/10s	:	22.2	
VOLE	: 12	Ť	Check tolerance			
		Ī	ccm/10s	•	22.2	
		I	Shutoff solenoid	•	22.2	
		I	Volt		12	
		I	VOCC	•	16	
INJECTION-PUMP TE	ST SPECIFICATIONS	1	DELIVERY AND BREA	KAWA	Y CHARACTER	ISTIC
	2. 0. 2021 20/1120/10	1		, .,,,,,		,_,
TIMING DEVICE CHA	RACTERISTIC	+	Rated speed rpm	:	1350	
		+	Del. quantity			
Rated speed rpm	: 1250	+	cm3/1000 strokes	:	45.0	
Tolerance mm	: 0.4	+	Tolerance			
Check		+	cm3/1000 strokes	:	2.0	
tolerance mm	: 0.7	+	Check tolerance			
Shutoff solenoid		+	cm3/1000s.	:	6.0	
Volt	: 12	+	Shutoff solenoid			
		+	Volt	:	12	
Rated speed rpm	: 800	+			4400	
		†	Rated speed rpm	:	1400	
SV travel mm	: 1.5	†	Del. quantity		40.0	
Tolerance mm	: 0.4	†	cm3/1000 strokes	;	10.0	
Check	. 0.7	†	Check tolerance cm3/1000s.		10.0	
tolerance mm	: 0.7	†		:	10.0	
Shutoff solenoid Volt	: 12	<b>T</b>	Shutoff solenoid Volt		12	
VOCE	: 12	Ţ	VOLL	•	12	
CLIDDI V DLIMD DDECCI	URE CHARACTERISTIC	I	Rated speed rpm	•	1450	
SOFFEI FOMF FRESSI	OKE CHARACTERISTIC	I	Del. quantity	•	1450	
Rated speed rpm	: 1250	I	cm3/1000 strokes	•	1.5	
Supply pomp	. ,,,,,	1	Tolerance	•		
pressure bar	: 7.1	1	cm3/1000 strokes	:	1.5	
Tolerance hPa	. 0.3	1	Check tolerance	-		
Shutoff solenoid	. •••	1	cm3/1000s.	:	1.5	
Volt	: 12	+	Shutoff solenoid		-	
•	_	+	Volt	:	12	
Rated speed rpm	: 500	+				
Supply pomp		+	Rated speed rpm	:	1250	
pressure bar	: 3.7	+	Del. quantity			
Tolerance hPa	: 0.3	+	cm3/1000 strokes	:	65.0	
Shutoff solenoid		+	Tolerance			
Volt	: 12	+	cm3/1000 strokes	:	1.5	
		+	Check tolerance			
OVERFLOW QUANTITY		+	cm3/1000s.	:	3.0	
	40.00	+	Shutoff solenoid		4-	
Rated speed rpm		+	Volt	:	12	
Overflow quantity		†	Data di con 114		F00	
ccm/10s	: 97.2	+	Rated speed rpm	:	500	
-10						

Del. quantity		F0 0	+	
cm3/1000 strokes Tolerance	•	58.0	‡	
cm3/1000 strokes Check tolerance	:	1.5	<u>†</u>	
cm3/1000s.	:	3.0	Ŧ	START
Shutoff solenoid Volt	:	12	1	Rated s
			+	Del. qu
Rated speed rpm Del. quantity		750	Ţ	cm3/100 Tolerar
cm3/1000 strokes Tolerance	:	65.5	<u>†</u>	cm3/100 Shutofi
cm3/1000 strokes	:	0.5	+	Volt
Check tolerance cm3/1000s.	:	3.0	‡	
Shutoff solenoid Volt	•	12	1	Rated s
<b>70</b> 11	•	, -	+	cm3/100
	<del></del>		 ‡	Tolerar
ELECTR. SHUTOFF CONTROL LEVER, ID	IE CT	·NP	<u>†</u>	Shutof1 Volt
·			Ŧ	VOCC
Rated speed rpm Del. quantity	:	400	‡	ASSEMBL
cm3/1000 strokes	:	1.5	+	Dimensi
Tolerance cm3/1000 strokes	:	1.5	Ŧ	Dimensi
Check tolerance cm3/1000s.	:	1.5	‡	Tolerar Dimensi
Spread cm3/1000 strokes		5.0	+	Tolerar
			Ŧ	
FULL-LOAD STOP CO	NTROL	LEVER	<b>†</b>	CONTROL
Rated speed rpm	:	400	+	SET
Del. quantity cm3/1000 strokes	:	1.5	Ŧ	
Tolerance cm3/1000 strokes	•	1.5	<u> </u>	Control positio
Spread	•		+	·
cm3/1000 strokes Check tolerance	:	5.0	‡	Control position
cm3/1000s. Spread	:	1.5	İ	
cm3/1000 strokes	:	5.0	+	
IDLE DELIVERY			+	End of
Rated speed rpm	:	475	Ŧ	
Del. quantity cm3/1000 strokes	:	1.5	‡	
Tolerance			+	
cm3/1000 strokes Check tolerance	:	1.5	Ŧ	
cm3/1000s. Shutoff solenoid	:	1.5	<u> </u>	
Volt	:	12	+	
			4-	

# TRANSITION

Rated speed rpm	:	250
Del. quantity cm3/1000 strokes	:	40.0
Tolerance cm3/1000 strokes Shutoff solenoid	:	10.0
Volt	:	12

speed rpm : 150 uantity 000 strokes : 115.0

nce

000 strokes : 25.0

f solenoid

12

# BLY AND ADJUSTMENT DIMENSIONS

ion Kmm : 5,2 ion KF mm : +-0,2 nce mm : 1,6 ion MS mm : +0,2 nce mm

# L LEVER POSITION

llever

: 37,9..39,9 on YAmm

llever

: 44,0..49,0 on YB mm

test-specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.10.95 : ISO 4113 Test oil

: 0 460 413 004 Part no. Pump designation: VE3/11F1250L163-2

Customer-spec, information Customer : IVECO-FIAT : 8035.06.220 Motor Power KW 33.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

Tolerance °C

Overflow

Inlet press. bar : 0.35 Tolerance bar

: 1 688 901 020 assembly

172 Tolerance bar

Test Lines : 1 680 750 000

Outside diameter : 6.00

x length mm 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

temperature °C 45

restriction mm 0.55

Test nozzle holde

Opening pressure

x inside diameter : 2.00

(as of UT) mm : 0,2 : +-0,02 Tolerance mm

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm 3.0 Tolerance mm 0.2 Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

800 Rated speed rpm

5.0 Setting hPa Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 800 Del. quantity cm3/1000 strokes : 59.5 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 3.5

Shutoff solenoid Volt 12

IDLE SETTING

Rated speed rpm 375 Del. quantity cm3/1000 strokes : 12.5 Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt 12 Spread 3.5

cm3/1000 strokes : Check tolerance 3.5 cm3/1000s.

FULL-LOAD SPEED REGULATION

Rated speed rpm 1400

Del. quantity

cm3/1000 strokes : 15.0

Tolerance cm3/1000 strokes		3.0	<u>†</u>	Tolerance ccm/10s	•	41.6	
Shutoff solenoid	•		Ŧ		•	41.0	
Volt	:	12	1	Check tolerance ccm/10s	•	41.6	
STARTING FUEL DEL	IVE	RY	Ŧ	Shutoff solenoid	•		
Rated speed rpm		100	1	Volt	:	12	
Del. quantity	•		Ŧ	Rated speed rpm	:	500	
cm3/1000 strokes Tolerance	:	105.0	1	Overflow quantity ccm/10s	′ .	63.8	
cm3/1000 strokes	:	25.0	1	Tolerance	•		
Shutoff solenoid Volt	•	12	1	ccm/10s	:	22.2	
<b>V</b> OCC	•	( <b>L</b>	<b>1</b>	Check tolerance			
			1	ccm/10s Shutoff solenoid	:	22.2	
			Ŧ	Volt	:	12	
INJECTION-PUMP TE	CT.	CDECTETCATIONS	- +	DELIVERY AND BREA	L VIII	AV CHADACTEDIST	rc
TIMECTION FOME TO	31	SECTITIONS	Į	DECIVERY AND DREA	11×71#	AT CHARACTERIST.	LC
TIMING DEVICE CHA	RAC	TERISTIC	<u>†</u>	Rated speed rpm Del. quantity	:	1400	
Rated speed rpm	:	1000	Ŧ	cm3/1000 strokes	:	15.0	
Tolerance mm Check	:	0.4	†	Tolerance cm3/1000 strokes	:	3.0	
tolerance mm	:	0.7	Ŧ	Check tolerance	•		
Shutoff solenoid Volt		12	<u> </u>	cm3/1000s. Shutoff solenoid	:	6.0	
VOCC	•		1	Volt	:	12	
Rated speed rpm	:	600	1	Rated speed rpm	:	1350	
SV travel mm	:	1.2	+	Del. quantity			
Tolerance mm Check	:	0.4	İ	cm3/1000 strokes Tolerance	:	45.0	
tolerance mm	:	0.7	+	cm3/1000 strokes	:	8.0	
Shutoff solenoid Volt	•	12	‡	Check tolerance cm3/1000s.	:	10.0	
	•		+	Shutoff solenoid	·		
SUPPLY PUMP PRESS	URE	CHARACTERISTIC	1	Volt	:	12	
Rated speed rpm	:	1250	+	Rated speed rpm	:	1450	
Supply pomp pressure bar	:	7.0	‡	Del. quantity cm3/1000 strokes	:	1.5	
Tolerance hPa	:	0.3	+	Tolerance cm3/1000 strokes		1.5	
Shutoff solenoid Volt	:	12	Į	Check tolerance	•		
Datad amond nam		500	†	cm3/1000s. Shutoff solenoid	:	1.5	
Rated speed rpm Supply pomp	•		Ŧ	Volt	:	12	
pressure bar Tolerance hPa	:	3.5 0.3	1	Rated speed rpm	:	1250	
Shutoff solenoid	•		+	Del. quantity			
Volt	:	12	‡	cm3/1000 strokes Tolerance	:	52.5	
OVERFLOW QUANTITY			+	cm3/1000 strokes	:	1.5	
Rated speed rpm	:	1250	‡	Check tolerance cm3/1000s.	:	3.5	
Overflow quantity			+	Shutoff solenoid	-		
ccm/10s	:	97.2	+	Volt	:	12	

Reted speed rpm	• 500	+ Shutoff solenoid + Volt : 12
Del. quantity cm3/1000 strokes		Rated speed rpm : 425
Tolerance		+ Del. quantity
cm3/1000 strokes Check tolerance		+ cm3/1000 strokes : 5.0 + Tolerance
cm3/1000s. Shutoff solenoid	: 3.5	+ cm3/1000 strokes : 3.0 + Check tolerance
Volt	: 12	+ cm3/1000S. : 4.0 + Shutoff solenoid
Rated speed rpm Del. quantity	: 800	+ Volt : 12
cm3/1000 strokes Tolerance	: 59.5	<del> </del>
cm3/1000 strokes Check tolerance	: 0.5	<u> </u>
cm3/1000s. Shutoff solenoid	: 3.5	+ START TRANSITION
Volt	: 12	Rated speed rpm : 250
		Del. quantity  cm3/1000 strokes : 35.0
ELECTR. SHUTOFF	N. S. STOD	+ Tolerance
CONTROL LEVER, ID		+ cm3/1000 strokes : 15.0 + Shutoff solenoid
Rated speed rpm Del. quantity		+ Volt : 12
cm3/1000 strokes Tolerance		+ Rated speed rpm : 150
cm3/1000 strokes Check tolerance		+ Del. quantity + cm3/1000 strokes : 105.0
cm3/1000s. Spread	: 1.5	+ Tolerance + cm3/1000 strokes : 25.0
cm3/1000 strokes	: 5.0	Shutoff solenoid Volt : 12
FULL-LOAD STOP CO	NTROL LEVER	
Rated speed rpm Del. quantity	: 375	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes Tolerance	: 1.5	Dimension K mm : - Dimension KF mm : 5,5
cm3/1000 strokes Spread	: 1.5	Tolerance mm : +-0,2 Dimension MS mm : 1,6
cm3/1000 strokes Check tolerance	: 5.0	Tolerance mm : +-0,2
cm3/1000s.	: 1.5	<del>-</del>
Spread cm3/1000 strokes	: 5.0	CONTROL LEVER POSITION SET
IDLE DELIVERY		7 321
Rated speed rpm	: 500	Control lever
Del. quantity cm3/1000 strokes	: 1.5	position YA mm : 37,939,9
Tolerance cm3/1000 strokes	: 1.5	+ Control lever + position YB mm : 46,051,0
Check tolerance cm3/1000s.	: 1.5	‡
		+

End of test-specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 21.03.95 Edition Test oil : ISO 4113

: 0 460 413 005 Part no. Pump designation: VE3/11F1200L163-3

Customer-spec. information : IVECO-FIAT Customer : 8035.05.265 Motor 35.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm 0.55 :

0.35 Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

172 bar Tolerance bar 3

Test lines : 1 680 750 000

Outside diameter : 6.00

2.00 x inside diameter: x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

: +-0,04 tolerance mm

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 800

Setting mm 3.4 Tolerance mm 0.2 Shutoff solenoid

24 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 800

Setting hPa 4.5 Tolerance hPa 0.3 Shutoff solenoid

Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

24

800 Rated speed rpm : Del. quantity

cm3/1000 strokes : 63.0

Tolerance

cm3/1000 strokes : 0.5 Spread

cm3/1000 strokes : 3.5

Shutoff solenoid

24 Volt

IDLE SETTING

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 24

Spread

cm3/1000 strokes : 3.5

Check tolerance

3.5 cm3/1000s.

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1350

Del. quantity

cm3/1000 strokes : 18.0

Tolerance		† Tolerance
cm3/1000 strokes Shutoff solenoid		+ ccm/10s : 41.6
Volt	: 24	Check tolerance
STARTING FUEL DEL	IVERY	+ ccm/10s : 41.6 + Shutoff solenoid
		+ Volt : 24
Rated speed rpm Del. quantity	: 100	+ Rated speed rpm : 500
cm3/1000 strokes	: 115.0	+ Overflow quantity
Tolerance cm3/1000 strokes	: 25.0	+ ccm/10s : 63.8 + Tolerance
Shutoff solenoid		ccm/10s : 22.2
Volt	: 24	† Check tolerance
		+ ccm/10s : 22.2
		+ Shutoff solenoid + Volt : 24
		<del></del> +
INJECTION-PUMP TE	EST SPECIFICATIONS	DELIVERY AND BREAKAWAY CHARACTERISTIC
TIMING DEVICE CHA	MRACTERISTIC	Rated speed rpm : 1350
Rated speed rpm	: 1200	+ Del. quantity + cm3/1000 strokes : 18.0
Tolerance mm		† Tolerance
Check tolerance mm	: 0.7	+ cm3/1000 strokes : 3.0 Check tolerance
Shutoff solenoid		+ cm3/1000s. : 6.0
Volt	: 24	+ Shutoff solenoid + Volt : 24
Rated speed rpm	: 500	+
SV travel mm	: 1.0	+ Rated speed rpm : 1300 + Del. quantity
Tolerance mm	: 0.4	+ cm3/1000 strokes : 41.0
Check tolerance mm	: 0.7	+ Tolerance + cm3/1000 strokes : 8.0
Shutoff solenoid		+ Check tolerance
Volt	: 24	+ cm3/1000s. : 10.0 + Shutoff solenoid
SUPPLY PUMP PRESS	URE CHARACTERISTIC	+ Volt : 24
Rated speed rpm	: 1200	+ Rated speed rpm : 1400
Supply pomp		+ Del. quantity
pressure bar Tolerance hPa	: 6.3 : 0.3	+ cm3/1000 strokes : 1.5 + Tolerance
Shutoff solenoid		+ cm3/1000 strokes : 1.5
Volt	: 24	+ Check tolerance + cm3/1000s. : 1.5
Rated speed rpm	: 500	+ Shutoff solenoid
Supply pomp pressure bar	: 3.2	+ Volt : 24
Tolerance hPa	: 0.3	Rated speed rpm : 1250
Shutoff solenoid Volt	: 24	+ Del. quantity + cm3/1000 strokes : 57.5
		† Tolerance
OVERFLOW QUANTITY		+ cm3/1000 strokes : 1.5 + Check tolerance
Rated speed rpm		+ cm3/1000s. : 3.5
Overflow quantity ccm/10s	: 97.2	+ Shutoff solenoid + Volt : 24
JOIII/ 103	. //	, , , , , , , , , , , , , , , , , , , ,

Rated speed rpm	: 50	00	+ Shutoff solenoid + Volt	: 24
Del. quantity cm3/1000 strokes	: (	51.0	‡	
Tolerance cm3/1000 strokes	:	1.5	+	
Check tolerance cm3/1000s. Shutoff solenoid	:	3.5	T START TRANSITION	
Volt	:	24	Rated speed rpm	
Rated speed rpm Del. quantity	: 80	00	Del. quantity cm3/1000 strokes	
cm3/1000 strokes Tolerance	:	53.0	Tolerance cm3/1000 strokes	
cm3/1000 strokes Check tolerance	:	0.5	Shutoff solenoid Volt	
cm3/1000s. Shutoff solenoid	:	3.0	1	
Volt	:	24	Rated speed rpm Del. quantity	
		<del></del>	cm3/1000 strokes Tolerance	
ELECTR. SHUTOFF CONTROL LEVER, IC	LE STOP		+ cm3/1000 strokes + Shutoff solenoid + Volt	
Rated speed rpm Del. quantity	: 35	50		
cm3/1000 strokes Tolerance	:	1.5	ASSEMBLY AND ADJ	USTMENT DIMENSIONS
cm3/1000 strokes Check tolerance	:	1.5	Dimension K mm Dimension KF mm	: - : 5,5
0110011 00001 01100				
cm3/1000S. Spread	:	1.5	+ Tolerance mm + Dimension MS mm	: +-0,2 : 1,6
cm3/1000S. Spread cm3/1000 strokes		5.0	<b>.</b>	: +-0,2
cm3/1000S. Spread	ENTROL LE	5.0 EVER	Dimension MS mm Tolerance mm	: +-0,2 : 1,6 : +-0,2
cm3/1000s. Spread cm3/1000 strokes  FULL-LOAD STOP CO Rated speed rpm Del. quantity		5.0 EVER 50	+ Dimension MS mm	: +-0,2 : 1,6 : +-0,2
cm3/1000s. Spread cm3/1000 strokes  FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	NTROL LE	5.0 EVER 50 1.5	Dimension MS mm Tolerance mm  CONTROL LEVER PO	: +-0,2 : 1,6 : +-0,2
cm3/1000s. Spread cm3/1000 strokes  FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Spread	NTROL LE	5.0 EVER 50 1.5	Dimension MS mm Tolerance mm  CONTROL LEVER PO	: +-0,2 : 1,6 : +-0,2
cm3/1000s. Spread cm3/1000 strokes  FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Spread cm3/1000 strokes Check tolerance	entrol le	5.0 EVER 50 1.5 1.5	Dimension MS mm Tolerance mm  CONTROL LEVER POSET  Control lever position YA mm  Control lever	: +-0,2 : 1,6 : +-0,2 SITION : 37,939,9
cm3/1000s. Spread cm3/1000 strokes  FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Spread cm3/1000 strokes Check tolerance cm3/1000s. Spread	NTROL LE	5.0 EVER 50 1.5 1.5 5.0	Dimension MS mm Tolerance mm  CONTROL LEVER POSET  Control lever position YA mm	: +-0,2 : 1,6 : +-0,2
cm3/1000s. Spread cm3/1000 strokes  FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Spread cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes	NTROL LE	5.0 EVER 50 1.5 1.5	Dimension MS mm Tolerance mm  CONTROL LEVER POSET  Control lever position YA mm  Control lever	: +-0,2 : 1,6 : +-0,2 SITION : 37,939,9
cm3/1000s. Spread cm3/1000 strokes  FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Spread cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes IDLE DELIVERY	NTROL LE	5.0 EVER 50 1.5 1.5 5.0 1.5	Dimension MS mm Tolerance mm  CONTROL LEVER POSET  Control lever position YA mm  Control lever	: +-0,2 : 1,6 : +-0,2 SITION : 37,939,9 : 44,549,5
cm3/1000s. Spread cm3/1000 strokes  FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Spread cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes  IDLE DELIVERY  Rated speed rpm Del. quantity	: 35 : : : : :	5.0 EVER 50 1.5 1.5 5.0 1.5 5.0	Dimension MS mm Tolerance mm  CONTROL LEVER PO. SET  Control lever position YA mm  Control lever position YB mm	: +-0,2 : 1,6 : +-0,2 SITION : 37,939,9 : 44,549,5
cm3/1000s. Spread cm3/1000 strokes  FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Spread cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes  IDLE DELIVERY  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 35 : : : : : : : : : : : : : : : : : : :	5.0 EVER 50 1.5 1.5 5.0 1.5 5.0	Dimension MS mm Tolerance mm  CONTROL LEVER PO. SET  Control lever position YA mm  Control lever position YB mm	: +-0,2 : 1,6 : +-0,2 SITION : 37,939,9 : 44,549,5
cm3/1000s. Spread cm3/1000 strokes  FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Spread cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes  IDLE DELIVERY  Rated speed rpm Del. quantity cm3/1000 strokes	: 35 : : : : : : : : : : : : : : : : : : :	5.0 EVER 50 1.5 1.5 5.0 1.5 5.0	Dimension MS mm Tolerance mm  CONTROL LEVER PO. SET  Control lever position YA mm  Control lever position YB mm	: +-0,2 : 1,6 : +-0,2 SITION : 37,939,9 : 44,549,5

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.95 Test oil : ISO 4113

Part no. : 0 460 414 013 Pump designation : VE4/11F1250L164

Customer-spec. information

Customer

: IVECO-FIAT

Motor

: 8045.05.200

Power KW : 58.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 020

Opening pressure

bar : 172 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 840

**REMARKS** 

BEGINNING OF DELIVERY

Prestroke

E19

(as of UT) mm : 0.2Tolerance mm : +-0.02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm : 3.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 800

Setting hPa : 5.4 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750 Del. quantity

cm3/1000 strokes : 69.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.5

Shutoff solenoid

Volt : 12

IDLE SETTING

Rated speed rpm : 350 Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt :

Spread cm3/1000 strokes : 3.5

12

Check tolerance

cm3/1000s. : 3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1350

Del. quantity

cm3/1000 strokes : 44.0

Tolerance			+	Overflow quantity	,		
cm3/1000 strokes	:	2.0	+	ccm/10s	:	97.2	
Shutoff solenoid			+	Tolerance			
Volt	:	12	+	ccm/10s	:	41.6	
CTANTING FUEL DEL	T	· DV	†	Charle dallaman			
STARTING FUEL DEL	.IVE	:KT	†	Check tolerance		41.6	
Rated speed rpm	:	100	Ţ	ccm/10s Shutoff solenoid	•	41.0	
Del. quantity	•	100	I	Volt		12	
cm3/1000 strokes	:	115.0	1	VOCC	•	, _	
Tolerance	•	11310	1	Rated speed rpm	:	500	
cm3/1000 strokes	:	25.0	1	Overflow quantity	,		
Shutoff solenoid			+	ccm/10s	:	63.8	
Volt	:	12	+	Tolerance			
			+	ccm/10s	:	22.2	
			+	-1 1			
			+	Check tolerance		22.2	
			†	ccm/10s	:	22.2	
INJECTION-PUMP TE		CDECTETCATIONS		Shutoff solenoid		12	
TIMPECITOIN-POMP IE	31	SPECIFICATIONS	Ī	Volt	•	12	
TIMING DEVICE CHA	RAC	TERISTIC	Ŧ	DELIVERY AND BREA	KAW	AY CHARACTE	RISTIC
Rated speed rpm	:	1250	I	Rated speed rpm	:	1350	
raced speed i pili	•	1250	1	Del. quantity	•	1330	
SV travel mm	:	7.2	1	cm3/1000 strokes	:	44.C	
Tolerance mm	:	0.4	1	Tolerance			
Check			+	cm3/1000 strokes	:	2.0	
tolerance mm	:	0.7	<del>}</del>	Check tolerance			
Shutoff solenoid			+	cm3/1000s.	:	6.0	
Volt	:	12	+	Shutoff solenoid		4.0	
Data dan ada men	_	500	†	Volt	:	12	
Rated speed rpm	:	500	†	Dated aroad nam	:	1400	
SV travel mm		0.8	I	Rated speed rpm Del. quantity	•	1400	
Tolerance mm	•	0.4	I	cm3/1000 strokes	:	12.0	
Check	•	0.4	1	Check tolerance	•	,	
tolerance mm	:	0.7	1	cm3/1000s.	:	8.0	
Shutoff solenoid	•		+	Shutoff solenoid	-		
Volt	:	12	1	Volt	:	12	
			+				
SUPPLY PUMP PRESS	URE	CHARACTERISTIC	+	Rated speed rpm	:	1450	
On Annal and Anna		4250	†	Del. quantity		A .	
Rated speed rpm	:	1250	†	cm3/100ù strokes	:	1.5	
Supply pomp pressure bar		7.3	Ţ	Tolerance cm3/1000 strokes		1.5	
Tolerance hPa	•	0.3	I	Check tolerance	•	1.5	
Shutoff solenoid	•	0.5	I	cm3/1000s.		1.5	
Volt	•	12	1	Shutoff solenoid	•	1.2	
	·		1	Volt	:	12	
Rated speed rpm	:	500	+				
Supply pomp			+	Rated speed rpm	:	1250	
pressure bar	:	3.9	+	Del. quantity			
Tolerance hPa	:	0.3	+	cm3/1000 strokes	:	65.5	
Shutoff solenoid		40	†	Tolerance		4 -	
Volt	:	12	†	cm3/1000 strokes	:	1.5	
OVEDELOU OUANTITY			1	Check tolerance cm3/1000s.	•	3.5	
OVERFLOW QUANTITY			I	Shutoff solenoid	•	ر. ت	
Rated speed rpm	:	1250	I	Volt	:	12	
	•	. 4.5 -	1	• •	•		

Dated aroud non	. 500	+ Shutoff solenoid + Volt : 12
Rated speed rpm Del. quantity		+ Volt : 12
cm3/1000 strokes Tolerance		Ŧ
cm3/1000 strokes Check tolerance		‡
cm3/1000s. Shutoff solenoid		+ START TRANSITION
Volt	: 12	+ Rated speed rpm : 250
Rated speed rpm Del. quantity	: 750	+ Del. quantity + cm3/1000 strokes : 57.0
cm3/1000 strokes Tolerance	: 69.0	Tolerance to the cm3/1000 strokes : 10.0
cm3/1000 strokes Check tolerance	: 0.5	Shutoff solenoid Volt : 12
cm3/1000s. Shutoff solenoid	: 3.0	
Volt	: 12	Rated speed rpm : 150 Del. quantity
		cm3/1000 strokes : 115.0  Tolerance
ELECTR. SHUTOFF	LE STOD	+ cm3/1000 strokes : 25.0
CONTROL LEVER, ID		+ Shutoff solenoid + Volt : 12
Rated speed rpm Del. quantity		4005100 V AND AN WOTHER STREET
cm3/1000 strokes Tolerance		ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes Check tolerance		+ Dimension K mm : - + Dimension KF mm : 5,5
cm3/1000S. Spread	: 1.5	+ Tolerance mm : +-0,2 + Dimension MS mm : 1,6
cm3/1000 strokes	: 5.0	+ Tolerance mm : +-0,2 +
FULL-LOAD STOP CO	NTROL LEVER	‡
Rated speed rpm Del. quantity	: 350	CONTROL LEVER POSITION SET
cm3/1000 strokes Tolerance	: 1.5	
cm3/1000 strokes Spread	: 1.5	Control lever position YA mm : 37,939,9
cm3/1000 strokes Check tolerance	: 5.0	Control lever
cm3/1000s. Spread	: 1.5	position YB mm : 44,149,1
cm3/1000 strokes	: 5.0	
IDLE DELIVERY		End of test-specification sheet
Rated speed rpm	: 500	+ End of test-specification sheet
Del. quantity cm3/1000 strokes	: 1.5	<b>†</b>
Tolerance cm3/1000 strokes	: 1.5	‡
Check tolerance cm3/1000S.	: 1.5	‡
		+

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 21.04.95

Test oil

: ISO 4113

Part no.

: 0 460 414 015

Pump designation: VE4/11F1250L164-1

Customer-spec. information

Customer

: IVECO-FIAT : 8045,06,200

Motor Power KW

53.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C

45

Tolerance °C

Overflow

restriction mm

0.55

Inlet press. bar :

Tolerance bar

0.35 0.05

Test nozzle holde

assembly

: 1 688 901 020

Opening pressure

172

Tolerance bar

Test lines

: 1 680 750 000

6.00

Outside diameter :

x inside diameter :

2.00

x length mm

840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 : +-0,02 Tolerance mm

Check

tolerance mm

: +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm 2.1 Tolerance mm 0.2 Shutoff solenoid

Volt

SUPPLY PUMP PRESSURE

800 Rated speed rpm :

Setting hPa 4.0 Tolerance hPa 0.3

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 800 Del. quantity

cm3/1000 strokes :

67.5

12

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0

Shutoff solenoid

Volt 12

IDLE SETTING

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 25.0

Tolerance

cm3/1000 strokes :

Shutoff solenoid

Volt

12

Spread

cm3/1000 strokes :

Check tolerance

3.5

2.0

cm3/1000s.

3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm

1365

Del. quantity

cm3/1000 strokes :

32.0

Tolerance			+ Supply pomp			
cm3/1000 strokes	:	3.0	+ pressure bar	:	3.2	
Shutoff solenoid			+ Tolerance hPa	:	0.3	
Volt	:	12	+ Shutoff solenoid		42	
CTARTING FUEL DEL	<b>TU</b>	DV	† Volt	:	12	
STARTING FUEL DEL	-TAF	KT	OVERFLOW QUANTITY			
Rated speed rpm	:	100	T OVERPLOW GOANTITT			
Del. quantity	•	100	+ Rated speed rpm	:	1250	
cm3/1000 strokes	:	115.0	+ Overflow quantity	•		
Tolerance			+ ccm/10s	:	97.2	
cm3/1000 strokes	:	25.0	† Tolerance			
Shutoff solenoid		40	+ ccm/10s	:	41.6	
Volt	:	12	Charle talamana			
			+ Check tolerance + ccm/10s		41.6	
			Shutoff solenoid	•	41.5	
			+ Volt	:	12	
INJECTION-PUMP TE	ST	SPECIFICAT:	, , ,	:	500	
			† Overflow quantity		<i>,</i>	
TIMING DEVICE CHA	ARAC	TERISTIC	+ ccm/10s	:	63.8	
Datad annual non		1100	+ Tolerance + ccm/10s		22.2	
Rated speed rpm	:	1100	T com/ tus	:	22.2	
SV travel mm	•	5.2	Check tolerance			
Tolerance mm	:	0.4	+ ccm/10s	:	22.2	
Check			+ Shutoff solenoid			
tolerance mm	:	0.7	+ Volt	:	12	
Shutaff calabaid						
Shutoff solenoid		4.5	†			
Volt	:	12	DELIVERY AND BREAK	AWA	Y CHARACTERIST	C
Volt	:		+			C
	: :	12 600	+ Rated speed rpm	AWA		CC
Volt Rated speed rpm	:	600	Rated speed rpm Del. quantity	:	1365	CC
Volt	:		+ Rated speed rpm	:	1365	CC
Volt Rated speed rpm SV travel mm Tolerance mm Check	:	600 0.5 0.3	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	1365	r c
Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	: : : : : : : : : : : : : : : : : : : :	600 0.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:	1365 32.0 3.0	CC
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	1365 32.0	CC
Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: : :	1365 32.0 3.0 6.0	CC
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	:	600 0.5 0.3 0.6 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	:	1365 32.0 3.0	IC.
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: : :	1365 32.0 3.0 6.0	IC.
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	:	600 0.5 0.3 0.6 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	1365 32.0 3.0 6.0 12 1395	I C
Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm	:	0.5 0.3 0.6 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes	: : : : : :	1365 32.0 3.0 6.0 12	CC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check	:	0.5 0.3 0.6 12 1250 5.7 0.4	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance	: : : : : :	1365 32.0 3.0 6.0 12 1395 12.0	CC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm	:	0.5 0.3 0.6 12 1250	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s.	: : : : : :	1365 32.0 3.0 6.0 12 1395	CC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	:	0.5 0.3 0.6 12 1250 5.7 0.4 0.7	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: : : : : :	1365 32.0 3.0 6.0 12 1395 12.0 8.0	CC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm	:	0.5 0.3 0.6 12 1250 5.7 0.4	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s.	: : : : : :	1365 32.0 3.0 6.0 12 1395 12.0	cc
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: : : : : :	1365 32.0 3.0 6.0 12 1395 12.0 8.0	rc
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	1365 32.0 3.0 6.0 12 1395 12.0 8.0 12	rc
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	1365 32.0 3.0 6.0 12 1395 12.0 8.0	r c
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PURA PRESS  Rated speed rpm Supply pomp	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERI 1250	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance		1365 32.0 3.0 6.0 12 1395 12.0 8.0 12 1430 1.5	τc
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm Supply pomp pressure bar	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERI 1250 6.3	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes		1365 32.0 3.0 6.0 12 1395 12.0 8.0 12	ιc
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PURA PRESS  Rated speed rpm Supply pomp pressure bar Tolerance hPa	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERI 1250	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance		1365 32.0 3.0 6.0 12 1395 12.0 8.0 12 1430 1.5 1.5	ιc
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm Supply pomp pressure bar Tolerance hPa Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERI 1250 6.3 0.3	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		1365 32.0 3.0 6.0 12 1395 12.0 8.0 12 1430 1.5	ιc
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PURA PRESS  Rated speed rpm Supply pomp pressure bar Tolerance hPa	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERI 1250 6.3	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance		1365 32.0 3.0 6.0 12 1395 12.0 8.0 12 1430 1.5 1.5	CC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm Supply pomp pressure bar Tolerance hPa Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	600 0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERI 1250 6.3 0.3	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  STIC  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid		1365 32.0 3.0 6.0 12 1395 12.0 8.0 12 1430 1.5 1.5 1.5	CC

	:	1250	+ Tolerance	
Del. quantity	•		cm3/1000 strokes	: 1.5
cm3/1000 strokes	:	61.0	+ Check tolerance	
Tolerance			+ cm3/1000s.	: 1.5
cm3/1000 strokes	:	1.5	+ Shutoff solenoid	
Check tolerance			→   Volt	: 12
cm3/1000s.	:	3.5	+	
Shutoff solenoid			+ Rated speed rpm	: 425
Volt	:	12	+ Del. quantity	
			+ cm3/1000 strokes	: 5.0
Rated speed rpm	:	500	+ Tolerance	
Del. quantity			+ cm3/1000 strokes	: 3.0
cm3/1000 strokes	:	62.0	+ Check tolerance	
Tolerance			+ cm3/1000s.	: 4.0
cm3/1000 strokes	:	1.5	+ Shutoff solenoid	
Check tolerance			+ Volt	: 12
cm3/1000s.	:	3.5	+	
Shutoff solenoid			+	
Volt	:	12	+	
			+	
Rated speed rpm	:	800	+	
Del. quantity			+	
cm3/1000 strokes	:	67.5	+ START TRANSITION	
Tolerance			+	
cm3/1000 strokes	:	0.5	+ Rated speed rpm	: 250
Check tolerance			+ Del. quantity	<b>55.6</b>
cm3/1000s.	:	3.0	+ cm3/1000 strokes	: 50.0
Shutoff solenoid			+ Tolerance	40.0
Volt	:	12	+ cm3/1000 strokes	: 10.0
			+ Shutoff solenoid	40
			T 1/01+	
			† Volt	: 12
ELECTR CHUTAFE	·		<del>-</del>	: 12
ELECTR. SHUTOFF		TOD	<del></del>	
ELECTR. SHUTOFF CONTROL LEVER, IC	oLE S	ТОР	Rated speed rpm	
CONTROL LEVER, ID			Rated speed rpm Del. quantity	: 150
CONTROL LEVER, ID			Rated speed rpm Del. quantity cm3/1000 strokes	: 150
CONTROL LEVER, ID Rated speed rpm Del. quantity	:	350	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 150 : 115.0
Rated speed rpm Del. quantity cm3/1000 strokes	:		Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 150 : 115.0
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: 150 : 115.0 : 25.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	350	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 150 : 115.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:	350 1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: 150 : 115.0 : 25.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	: 150 : 115.0 : 25.0 : 12
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	: : :	350 1.5 1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	: 150 : 115.0 : 25.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : :	350 1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU	: 150 : 115.0 : 25.0 : 12
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	350 1.5 1.5 1.5 5.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS : -
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	: : : : : : : : : : : : : : : : : : : :	350 1.5 1.5 1.5 5.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS : - : 5,2
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO	: : : : : :	350 1.5 1.5 1.5 5.0 LEVER	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS : - : 5,2 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO	: : : : : : : : : : : : : : : : : : : :	350 1.5 1.5 1.5 5.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS : - : 5,2 : +-0,2 : 1,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity	: : : : : : : : : :	350 1.5 1.5 5.0 LEVER 350	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS : - : 5,2 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes	: : : : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS : - : 5,2 : +-0,2 : 1,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS : - : 5,2 : +-0,2 : 1,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : :	350 1.5 1.5 5.0 LEVER 350	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm Tolerance mm CONTROL LEVER POS	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CORated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm Tolerance mm CONTROL LEVER POS	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU  Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm CONTROL LEVER POS SET	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY	: : : : : : :	350 1.5 1.5 5.0 LEVER 350 1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm CONTROL LEVER POS SET  Control Lever	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY Rated speed rpm	: : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU  Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm CONTROL LEVER POS SET	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY	: : : : : : :	350 1.5 1.5 5.0 LEVER 350 1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm CONTROL LEVER POS SET  Control Lever	: 150 : 115.0 : 25.0 : 12 ISTMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6 : +-0,2

Control lever position YB mm	: 43,648,6
End of test-speci	fication shoot

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 21.04.95 : ISO 4113

Part no.

: 0 460 414 024 Pump designation: VE4/11F1250L164-2

Customer-spec, information Customer

: IVECO-FIAT

Motor Power KW : 8045.06.220

48.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

restriction mm

0.55

Inlet press. bar :

0.35

Tolerance bar

0.05

Test nozzle holde

assembly

: 1 688 901 020

Opening pressure

bar

172

Tolerance bar

Test lines

: 1 680 750 000

6.00

x inside diameter :

Outside diameter :

2.00

x length mm

840

REMARKS

BEGINNING OF DELIVERY

Prestroke

: 0,2 (as of UT) mm : +-0,02 Tolerance mm

Check

tolerance mm

: 4-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 800

Setting mm 3.2 Tolerance mm 0.2

Shutoff solenoid

Valt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 800

Setting hPa Tolerance hPa 0.3 Shutoff solenoid

Volt

12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 750

Del. quantity

62.5

cm3/1000 strokes : Tolerance

cm3/1000 strokes :

0.5

Spread

cm3/1000 strokes : 4.0 Shutoff solenoid

Volt

12

IDLE SETTING

Rated speed rpm 350

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

Spread

cm3/1000 strokes :

Check tolerance

3.5

cm3/1000s.

3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm 1350

Del. quantity cm3/1000 strokes :

45.0

Tolerance			+	Supply pomp			
cm3/1000 strokes	:	2.0	+	pressure bar	:	3.5	
Shutoff solenoid			+	Tolerance hPa	:	3.5	
Volt	:	12	+	Shutoff solenoid			
			+	Volt	:	12	
STARTING FUEL DEL	IVE	RY	+				
			+	OVERFLOW QUANTITY	′		
Rated speed rpm	:	100	+				
Del. quantity			+	Rated speed rpm	:	1250	
cm3/1000 strokes	:	115.0	+	Overflow quantity	,		
Tolerance			+	ccm/10s	:	97.2	
cm3/1000 strokes	:	25.0	+	Tolerance			
Shutoff solenoid			+	ccm/10s	:	41.6	
Volt	:	12	+				
			+	Check tolerance			
			+	ccm/10s	:	41.6	
			+	Shutoff solenoid			
			+	Volt	:	12	
			+				
INJECTION-PUMP TE	ST	SPECIFICATIO	NS †	Rated speed rpm		500	
TIMING DELITOR OU		TED 10710	†	Overflow quantity	,	<b>(2 5</b>	
TIMING DEVICE CHA	KAL	IEKT211C	†	ccm/10s Tolerance	:	62.5	
Rated speed rpm	:	1000	Ţ	ccm/10s	:	20.8	
Raced Speed Phil	•	1000	I	CCM7 10S	•	20.0	
SV travel mm		5.2	I	Check tolerance			
Tolerance mm	:	0.4	1	ccm/10s	•	20.8	
Check	•	0.4	1	Shutoff solenoid	•	20.0	
tolerance mm	•	0.7	1	Volt	•	12	
	-						
Shutoff solenoid			+				
Shutoff solenoid Volt	:	12	1	DELIVERY AND BREA	KAWA	AY CHARACTE	ERISTIC
	:	12	+	DELIVERY AND BREA	KAWA	Y CHARACTI	ERISTIC
	:	12 600	† † †	Rated speed rpm		AY CHARACTE	ERISTIC
Volt Rated speed rpm	:	600	† † † †	Rated speed rpm Del. quantity	:	1350	ERISTIC
Volt	:	600 1.6	† † † †	Rated speed rpm Del. quantity cm3/1000 strokes	:		ERISTIC
Volt Rated speed rpm SV travel mm Tolerance mm	:	600	† † † † †	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	1350 45.0	ERISTIC
Volt Rated speed rpm SV travel mm Tolerance mm Check	:	600 1.6 0.4	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	1350	ERISTIC
Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	: : : : : : : : : : : : : : : : : : : :	600 1.6	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:	1350 45.0 2.0	ERISTIC
Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : : :	600 1.6 0.4 0.7	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	1350 45.0	ERISTIC
Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	: : : : : : : : : : : : : : : : : : : :	600 1.6 0.4	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid	:	1350 45.0 2.0 6.0	ERISTIC
Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	:	600 1.6 0.4 0.7 12	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	1350 45.0 2.0	ERISTIC
Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	:	600 1.6 0.4 0.7	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	:	1350 45.0 2.0 6.0	ERISTIC
Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm	:	600 1.6 0.4 0.7 12	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm	: : : : :	1350 45.0 2.0 6.0	ERISTIC
Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm	:	600 1.6 0.4 0.7 12 1250 5.8	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400	ERISTIC
Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm	:	600 1.6 0.4 0.7 12	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0	ERISTIC
Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check	:	600 1.6 0.4 0.7 12 1250 5.8 0.4	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0	ERISTIC
Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm	:	600 1.6 0.4 0.7 12 1250 5.8	+++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000S.	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400	ERISTIC
Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	:	600 1.6 0.4 0.7 12 1250 5.8 0.4 0.7	++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0 8.0	ERISTIC
Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm	:	600 1.6 0.4 0.7 12 1250 5.8 0.4	+++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000S.	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0	ERISTIC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt		600 1.6 0.4 0.7 12 1250 5.8 0.4 0.7 12	++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0 8.0	ERISTIC
Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid		600 1.6 0.4 0.7 12 1250 5.8 0.4 0.7 12	TIC ++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0 8.0 12	ERISTIC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt		600 1.6 0.4 0.7 12 1250 5.8 0.4 0.7 12	++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0 8.0 12	ERISTIC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS		600 1.6 0.4 0.7 12 1250 5.8 0.4 0.7 12 CHARACTERIST	TIC ++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0 8.0 12 1450 1.5	ERISTIC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm		600 1.6 0.4 0.7 12 1250 5.8 0.4 0.7 12 CHARACTERIST 1250 6.4	TIC ++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s.	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0 8.0 12 1450	ERISTIC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm Supply pomp pressure bar Tolerance hPa		600 1.6 0.4 0.7 12 1250 5.8 0.4 0.7 12 CHARACTERIST	TIC	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0 8.0 12 1450 1.5 1.5	ERISTIC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm Supply pomp pressure bar Tolerance hPa Shutoff solenoid		600 1.6 0.4 0.7 12 1250 5.8 0.4 0.7 12 CHARACTERIST 1250 6.4 0.3	TIC	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0 8.0 12 1450 1.5	ERISTIC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm Supply pomp pressure bar Tolerance hPa		600 1.6 0.4 0.7 12 1250 5.8 0.4 0.7 12 CHARACTERIST 1250 6.4	TIC	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0 8.0 12 1450 1.5 1.5 1.5	ERISTIC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm Supply pomp pressure bar Tolerance hPa Shutoff solenoid		600 1.6 0.4 0.7 12 1250 5.8 0.4 0.7 12 CHARACTERIST 1250 6.4 0.3	++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : : : : : : : : : : : : : : : : : : :	1350 45.0 2.0 6.0 12 1400 13.0 8.0 12 1450 1.5 1.5	ERISTIC

		_	
Rated speed rpm	: 125	0 +	Tolerance
Del. quantity	_		cm3/1000 strokes : 1.5
cm3/1000 strokes	: 5	3.5	Check tolerance
Tolerance		+	c <b>m</b> 3/1 <b>000</b> S. : 1.5
cm3/1000 strokes	:	1.5	Shutoff solenoid
Check tolerance		+	Volt : 12
cm3/1000s.	:	3.5 →	
Shutoff solenoid		<del>}</del>	
Volt	:	12	
		1	
Rated speed rpm	: 50	o 1	
Del. quantity		1	
cm3/1000 strokes	: 5	9.0	START TRANSITION
Tolerance	. ,	1.9	OTART MARGITION
cm3/1000 strokes	•	2.0	Rated speed rpm : 250
Check tolerance	•	1	Del. quantity
cm3/1000s.	•	3.5	cm3/1000 strokes : 40.0
Shutoff solenoid	•	J. J	Tolerance
Volt	•	12	cm3/1000 strokes : 10.0
VOLL	•	' <sup>c</sup> †	Shutoff solenoid
Rated speed rpm	: 750	n T	Volt : 12
	, /3	<b>'</b>	vocc : 12
Del. quantity cm3/1000 strokes	, 4	2.5	
Tolerance	. 0	2.3	Dated aread num 450
cm3/1000 strokes	. (	0.5	Rated speed rpm : 150
		1.3	Del. quantity
Check tolerance		7.0	cm3/1000 strokes : 125.0
cm3/1000s.	:	3.0	Tolerance
Shutoff solenoid	_	12	cm3/1000 strokes : 25.0
Volt	;	12	Shutoff solenoid Volt : 12
		<b></b> -	VALT • 1/
		<b>,</b>	
		+	
ELECTR CHUTAGE		+	
ELECTR. SHUTOFF	LE STOD		ASSEMBLY AND ADJUSTMENT DIMENSIONS
ELECTR. SHUTOFF CONTROL LEVER, ID	LE STOP	<del>-</del>	ASSEMBLY AND ADJUSTMENT DIMENSIONS
CONTROL LEVER, ID			ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : -
CONTROL LEVER, ID			ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2
CONTROL LEVER, ID  Rated speed rpm Del. quantity	: 350	+	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes	: 350	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 350	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 350	+	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 350 : 4	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 350 : 4	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	: 350 : 4	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 350 : 4	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes	: 350 : '	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	: 350 : '	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO	: 350 : 7 : 7 : 5 NTROL LEV	1.5 1.5 1.5 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO	: 350 : '	1.5 1.5 1.5 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO	: 350 : 2 : 3 : 5 NTROL LEV	1.5 1.5 1.5 5.0 /ER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes	: 350 : 2 : 3 : 5 NTROL LEV	1.5 1.5 1.5 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 350 : 6 : 5 NTROL LEV : 350 : 1	1.5 1.5 1.5 5.0 /ER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 350 : 6 : 5 NTROL LEV : 350 : 1	1.5 1.5 1.5 5.0 /ER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 350 : 2 : 5 NTROL LEV : 350 : 1	1.5 1.5 1.5 5.0 VER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 350 : 7 : 5 NTROL LEV : 350 : 1	1.5 1.5 1.5 5.0 /ER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes FULL-LOAD STOP CORRATED STOP CORRATED STOP CORRATED STORES Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 350 : 2 : 5 NTROL LEV : 350 : 1	1.5 1.5 1.5 5.0 VER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,249,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 350 : 2 : 5 NTROL LEV : 350 : 1	1.5 1.5 1.5 5.0 VER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes FULL-LOAD STOP CORated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  IDLE DELIVERY	: 350 : 2 : 5 NTROL LEV : 350 : 1 : 1	1.5 1.5 1.5 5.0 /ER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,249,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY Rated speed rpm	: 350 : 2 : 5 NTROL LEV : 350 : 1	1.5 1.5 1.5 5.0 /ER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,249,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000s. IDLE DELIVERY Rated speed rpm Del. quantity	: 350 : 6 : 7 : 7 : 7 : 7 : 7 : 7 : 1 : 1 : 1	1.5 1.5 1.5 5.0 /ER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,249,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY Rated speed rpm	: 350 : 6 : 7 : 7 : 7 : 7 : 7 : 7 : 1 : 1 : 1	1.5 1.5 1.5 5.0 /ER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,249,6

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.12.95 Test oil : ISO 4113

Part no. : 0 460 406 049 Pump designation : VE6/10F2400L216

Customer-spec. information

Customer : VW

Motor : 087T-Vol LLK Power KW : 90.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

**REMARKS** 

INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 800

Setting mm : 1.7
Tolerance mm : 0.2
Shutoff solenoid

SUPPLY PUMP PRESSURE

Volt

Rated speed rpm : 1500
Aneroid pressure

hPa : 800

Setting hPa : 6.0 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

: 1500 Rated speed rpm Aneroid pressure 800 hPa Del. quantity cm3/1000 strokes : 46.0 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 26.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 3.0

## IDLE SETTING

Rated speed rpm : 415
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

Spread			+	Tolerance mm	:	0.4
cm3/1000 strokes	:	2.0	+	Check		0.7
Check tolerance cm3/1000S.	:	3.0	<u>†</u>	tolerance mm Shutoff solenoid	:	0.7
CIII37 10003.	•	5.0	I	Volt	•	12
			1		•	
FULL-LOAD SPEED R	REGULAT	ION	+	SUPPLY PUMP PRESS	URE	CHARACTERISTIC
Dahad ayaad aya	. 2	/7F	†	Data dana ada ana		2/00
Rated speed rpm Pressure hPa	: 2	675 800	İ	Rated speed rpm Aneroid pressure	:	2400
Del. quantity	•	000	Ţ	hPa	:	800
cm3/1000 strokes	:	16.0	+	Supply pomp	•	
Tolerance			+	pressure bar	:	8.2
cm3/1000 strokes	:	2.0	+	Tolerance hPa	:	0.3
Shutoff solenoid Volt	•	12	Ī	Shutoff solenoid Volt	•	12
VOCC	•	12	Į	٧٥(١	•	12
STARTING FUEL DEL	IVERY		+	Rated speed rpm	:	600
			+	Aneroid pressure		
Rated speed rpm	•	100	†	hPa Summilia mann	:	800
Del. quantity cm3/1000 strokes	:	65.0	Ī	Supply pomp pressure bar	•	3.6
Tolerance	•	03.0	1	Tolerance hPa	:	0.3
cm3/1000 strokes	:	25.0	+	Shutoff solenoid		
Shutoff solenoid			+	Volt	:	12
Volt	:	12	†	OVEREL OU OUANTITY		
			Ī	OVERFLOW QUANTITY		
			1	Rated speed rpm	:	600
			+	Overflow quantity		
		075704770110	<del> +</del>	ccm/10s	:	62.5
INJECTION-PUMP TE	SI SPE	CIFICATIONS	Ī	Tolerance ccm/10s	:	20.8
TIMING DEVICE CHA	RACTER:	ISTIC	Ī	CCIII/ 103	•	20.0
			+	Check tolerance		
Rated speed rpm	: 24	400	+	ccm/10s	:	34.7
Aneroid pressure		900	†	Shutoff solenoid		12
hPa Tolerance mm		800 0.4	Ī	Volt	•	12
Check	•	0.4	1	Rated speed rpm	:	2400
tolerance mm	:	0.7	+	Aneroid pressure		
Shutoff solenoid		40	+	hPa	:	800
Volt	:	12	†	Overflow quantity ccm/10s		97.2
Rated speed rpm	: 12	200	I	Tolerance	•	71.2
Aneroid pressure	• '	200	1	ccm/10s	:	41.6
hPa	:	800	+			
		0.0	†	Check tolerance		
SV travel mm	:	0.8 0.4	†	ccm/10s Shutoff solenoid	:	55.5
Tolerance mm Check	•	0.4	I	Volt	:	12
tolerance mm	:	0.7	1		•	
Shutoff solenoid			+	DELIVERY AND BREAK	KAWA	AY CHARACTERISTIC
Volt	:	12	+			2/75
Rated speed rpm	: 20	000	İ	Rated speed rpm Aneroid pressure	:	2675
Aneroid pressure		<i>,</i>	Į	hPa	:	800
hPa	:	800	+	Del. quantity		
		7.4	+	cm3/1000 strokes	:	16.0
SV travel mm	:	3.1	+			

Tolerance cm3/1000 strokes		2.0	+	Check tolerance cm3/1000s.		3.0	
Check tolerance	•	4.0	Ŧ	Shutoff solenoid	•		
cm3/1000s. Shutoff solenoid	•		Ŧ	Volt	•	12	
Volt	:	12	+	Rated speed rpm Aneroid pressure		1500	
Rated speed rpm Aneroid pressure	:	2850	‡	hPa Del. quantity	:	800	
hPa Del. quantity	:	800	<u> </u>	cm3/1000 strokes Tolerance	:	46.0	
cm3/1000 strokes Check tolerance	:	3.0	1	cm3/1000 strokes Check tolerance	:	0.5	
cm3/1000s. Shutoff solenoid	:	6.0	+	cm3/1000s. Shutoff solenoid	:	2.2	
Volt	:	12	Ŧ	Volt	:	12	
Rated speed rpm	:	2575	Ŧ				
Aneroid pressure	:	800	‡	ELECTR. SHUTOFF			
Del. quantity cm3/1000 strokes	:	30.0	‡	CONTROL LEVER, II			
Tolerance cm3/1000 strokes	:	5.0	‡	Rated speed rpm Del. quantity			
Check tolerance cm3/1000s.	:	6.0	‡	cm3/1000 strokes Tolerance	:	1.5	
Shutoff solenoid Volt	:	12	‡	cm3/1000 strokes Check tolerance	:	1.5	
Rated speed rpm	:	800	‡	cm3/1000S. Spread	:	1.5	
Aneroid pressure	•	300	<u> </u>	cm3/1000 strokes	:	5.0	
Del. quantity cm3/1000 strokes	•	34.5	İ	FULL-LOAD STOP CO	NTRO	L LEVER	
Tolerance		0.5	<del>-</del>	Rated speed rpm	:	415	
cm3/1000 strokes Check tolerance	•		Ŧ	Del. quantity cm3/1000 strokes	:	1.5	
cm3/1000s. Shutoff solenoid	:	3.0	Ţ	Tolerance cm3/1000 strokes	:	1.5	
Volt	:	12	‡	Spread cm3/1000 strokes	:	5.0	
Rated speed rpm Aneroid pressure	:	2400	‡	Check tolerance cm3/1000s.	:	1.5	
hPa Del. quantity	:	800	<b>†</b>	Spread cm3/1000 strokes	:	5.0	
cm3/1000 strokes Tolerance	:	38.5	‡	IDLE DELIVERY			
cm3/1000 strokes Check tolerance	:	1.0	<u> </u>	Rated speed rpm	:	750	
cm3/1000s. Shutoff solenoid	:	2.2	<u> </u>	Del. quantity cm3/1000 strokes		2.0	
Volt	:	12	1	Tolerance cm3/1000 strokes		2.0	
Rated speed rpm	:	600	+	Check tolerance cm3/1000s.	•	2.0	
Aneroid pressure hPa	:	800	Ŧ	Shutoff solenoid	•	12	
Del. quantity cm3/1000 strokes	:	40.0	Ŧ	VOLL	•	16	
Tolerance cm3/1000 strokes	:	1.5	Ţ				

## START TRANSITION

Rated speed rpm : 380

Del. quantity

cm3/1000 strokes : 20.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 230

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 6,4
Tolerance mm : +-0,2
Dimension MS mm : 1,8
Tolerance mm : +-0,2
TLA travel mm : 12,7

CONTROL LEVER POSITION SET

Control lever

position YA mm : 8,5...10,5

Control lever

position YB mm : 71,0..89,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 23.06.95 Edition Test oil : ISO 4113 : 0 460 485 023 Part no. Pump designation: VE5/8F2100L457-2 Customer-spec. information Customer : VW : 2,41 WK-SD T4 Motor TEST BENCH REQUIREMENTS Calibrating-oil return temperature °C 45 Tolerance °C Overflow restriction mm 0.55 Inlet press. bar : 0.35 Tolerance bar 0.05Test nozzle holde : 1 688 901 000 assembly Opening pressure 147 bar Tolerance bar : 1 680 750 000 Test lines Outside diameter : 6.00 2.00 x inside diameter : x length mm 840 REMARKS

Rated speed rpm : 1500 4.3 Setting mm Tolerance mm 0.2 Shutoff solenoid 12 Volt SUPPLY PUMP PRESSURE Rated speed rpm : 1500 Setting hPa 7.4 Tolerance hPa 0.3 Shutoff solenoid 12 Volt FULL-LOAD DELIV. WITHOUT BOOST PRESSURE Rated speed rpm 1250 Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 2.0 Shutoff solenoid Volt 12 HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING 540 Rated speed rpm Del. quantity cm3/1000 strokes : 7.0 Tolerance cm3/1000 strokes : 0.5 Shutoff solenoid 12 Volt FULL-LOAD SPEED REGULATION Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Shutoff solenoid 12 Volt STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 strokes : 25.0 Shutoff solenoid Volt 12

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

			1	Supply pomp			
			+	pressure bar	:	8.1	
			+	Tolerance hPa	:	0.3	
LOAD-DEPENDENT ST	ART	OF DELIVERY	+	Shutoff solenoid			
SETTING			+	Volt	:	12	
			†			4400	
DELIVERY DIFFEREN	ICE		†	Rated speed rpm	:	1100	
Dated anded non		1500	†	Supply pomp		6.2	
Rated speed rpm Del. quantity	•	1300	Ī	pressure bar Tolerance hPa	:		
cm3/1000 strokes	•	<b>-</b> 7 ∩	I	Shutoff solenoid	•	0.5	
Tolerance	•	7.0	1	Volt	:	12	
cm3/1000 strokes	:	1,0	1		•		
Shutoff solenoid			+	OVERFLOW QUANTITY			
Volt	:	12	+				
			+	Rated speed rpm		2100	
PRESSURE DIFFEREN	CE		+	Overflow quantity			
			+	ccm/10s	:	97.2	
Rated speed rpm	:	1500	+	Tolerance			
Del. quantity		2.5	†	ccm/10s	:	41.6	
cm3/1000 strokes	:	-0.2	†	Object Address			
Tolerance	_	0.4	†	Check tolerance		FF F	
cm3/1000 strokes Shutoff solenoid	•	0.1	†	ccm/10s Shutoff solenoid	:	55.5	
Volt		12	T	Volt		12	
vott	•	12	I	νοιι	•	12	
TIMING-DEVICE TRA	VFI	DIFFERENCE	I	Rated speed rpm	:	600	
TIME DEVICE THAT	V	DIFFERENCE	1	Overflow quantity		000	
Rated speed rpm	:	1500	1	ccm/10s	:	63.8	
Del. quantity			1	Tolerance			
cm3/1000 strokes	:	-1.2	+	ccm/10s	:	22.2	
Tolerance			+				
cm3/1000 strokes	:	0.1	+	Check tolerance			
Shutoff solenoid			+	ccm/10s	:	34.7	
Volt	:	12	+	Shutoff solenoid		4.4	
			†	Volt	:	12	
TALLECTION DIMD TE	CT C	DECTETCATIONS		NELTUEDY AND DOCAL	< AL 1A	V CHADACTEDICTIC	
INJECTION-PUMP TE	\$1 5	PECIFICATIONS	†	DELIVERY AND BREAK	KAWA	IT CHARACIERISITC	
TIMING DEVICE CHA	DACT	EDICTIC	Ī	Pated speed rom	•	2400	
ITHING DEVICE CHA	RACI	EKISTIC	I	Rated speed rpm Del. quantity	•	2400	
Rated speed rpm	•	1790	1	cm3/1000 strokes	•	12.0	
Tolerance mm		0.4	1	Tolerance	•	, 2.0	
Check	•	<b>3.</b> ,	1	cm3/1000 strokes	:	2.0	
tolerance mm	:	0.7	1	Check tolerance	•		
Shutoff solenoid			+	cm3/1000s.	:	4.0	
Volt	:	12	+	Shutoff solenoid			
			+	Volt	:	12	
Rated speed rpm	:	1100	+				
			+	Rated speed rpm	:	2300	
SV travel mm	:	1.6	+	Del. quantity		20.2	
Tolerance mm	:	0.4	+	cm3/1000 strokes	:	22.0	
Check	_	0.7	†	Tolerance		5.0	
tolerance mm	:	0.7	†	cm3/1000 strokes	:	5.0	
Shutoff solenoid		12	†	Check tolerance		6.0	
Volt	:	12	†	cm3/1000S. Shutoff solenoid	•	0.0	
SUPPLY PUMP PRESSU	IDE 4	CHADACTEDISTIC	Ī	Volt	•	12	
SUPPLI PUMP PRESSI	) NE (	MARACIERISTIC	I	¥0()	•	12	
Rated speed rpm	:	1790	1	Rated speed rpm	:	2600	
······································	•	=	•				

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Del. quantity			+ Spread
cm3/1000 strokes	:	3.0	+ cm3/1000 strokes : 5.0
Tolerance			+
cm3/1000 strokes	:	3.0	→ FULL-LOAD STOP CONTROL LEVER
Check tolerance			1
cm3/1000s.	•	3.0	Rated speed rpm : 415
Shutoff solenoid	•	5.0	Del. quantity
		12	
Volt	•	12	l l
		0400	+ Tolerance
Rated speed rpm	:	2100	+ cm3/1000 strokes : 1.5
Del. quantity			+ Spread
cm3/1000 strokes	:	29.5	+ cm3/1000 strokes : 5.0
Tolerance			+ Check tolerance
cm3/1000 strokes	•	1.0	+ cm3/1000s. : 1.5
Check tolerance	•	, , , ,	Spread
cm3/1000s.		2.2	cm3/1000 strokes : 5.0
		۲.۲	T cilist todo strokes . 3.0
Shutoff solenoid		40	†
Volt	:	12	†
			†
Rated speed rpm	:	1850	
Del. quantity			+ RESIDUAL QUANTITY
cm3/1000 strokes	:	32.5	+
Tolerance		- <u>-</u> - <del>-</del>	Rated speed rpm : 490
cm3/1000 strokes	•	3.0	+ Del. quantity
Shutoff solenoid	•	5.0	+ cm3/1000 strokes : 7.8
		12	
Volt	•	12	+ Tolerance
· ·		400	+ cm3/1000 strokes : 1.0
Rated speed rpm	:	600	+ Check tolerance
Del. quantity			+ cm3/1000s. : 2.5
cm3/1000 strokes	:	33.3	+ Shutoff solenoid
T. I			→ Volt : 12
loterance			T VOLU . 12
Tolerance cm3/1000 strokes	:	1.5	Ţ vott : 12
cm3/1000 strokes	:	1.5	
cm3/1000 strokes Check tolerance	:		
cm3/1000 strokes Check tolerance cm3/1000s.	:	1.5 3.0	<del> </del>
cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid	:	3.0	CHECKING LOAD-DEPENDENT
cm3/1000 strokes Check tolerance cm3/1000s.	: :		<del> </del>
cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt	:	3.0 12	CHECKING LOAD-DEPENDENT START OF DELIVERY
cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt Rated speed rpm	:	3.0 12	CHECKING LOAD-DEPENDENT
cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt Rated speed rpm Del. quantity	:	3.0 12 1250	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE
cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt Rated speed rpm	:	3.0 12 1250	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes	:	3.0 12 1250	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: :	3.0 12 1250 35.5	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: :	3.0 12 1250	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: :	3.0 12 1250 35.5 0.5	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: :	3.0 12 1250 35.5	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0
cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid	: :	3.0 12 1250 35.5 0.5 2.2	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: :	3.0 12 1250 35.5 0.5	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0
cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid	: :	3.0 12 1250 35.5 0.5 2.2	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid
cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid	: :	3.0 12 1250 35.5 0.5 2.2	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0
cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid	: :	3.0 12 1250 35.5 0.5 2.2	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: :	3.0 12 1250 35.5 0.5 2.2	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  ELECTR. SHUTOFF	: : : : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: : : : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID	: : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm	: : : : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity	: : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes	: : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : :	3.0 12 1250 35.5 0.5 2.2 12 STOP 415 1.5	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 strokes : 0.1
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 strokes : 0.1 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : :	3.0 12 1250 35.5 0.5 2.2 12 STOP 415 1.5	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000s. : 0.1
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : :	3.0 12 1250 35.5 0.5 2.2 12 STOP 415 1.5	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 strokes : 0.1 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : : : : :	3.0 12 1250 35.5 0.5 2.2 12 STOP 415 1.5	CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000s. : 0.1

#### DELIVERY DIFFERENCE

Rated speed rpm : 1500

Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm3/1000 strokes : 1.5

Check tolerance

cm3/1000s. : 1.5

Shutoff solenoid

Volt : 12

#### PRESSURE DIFFERENCE

Rated speed rpm : 1500

Supply pomp

pressure bar : -1.0 Tolerance hPa : 0.2

Shutoff solenoid

Volt : 12

#### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500

Tolerance mm : 0.2

Check

0.6

12

tolerance mm Shutoff solenoid

Volt : 12

#### START TRANSITION

Rated speed rpm : 380

Del. quantity

cm3/1000 strokes : 27.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt :

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm : +-0,1

Dimension KF mm : 5,8

Tolerance mm : +-0,2

Dimension MS mm : 1,4 Tolerance mm : +-0,2

F08

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 21,04,95 Edition : ISO 4113 Test oil

: 0 460 485 030 Part no. Pump designation: VE5/8F2100L457-5

Customer-spec. information

: VW Customer

: 2,41 WK-SD T4 Motor

57.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

147 bar Tolerance bar

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840

**REMARKS** 

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

4.3 Setting mm Tolerance mm 0.2

Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

1500 Rated speed rpm :

Setting hPa 7.4 Tolerance hPa 0.3 Shutoff solenoid

Valt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm 1250

Del. quantity cm3/1000 strokes : 35.5 Tolerance

cm3/1000 strokes :

0.5 Spread

cm3/1000 strokes :

2.0 Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 540

Del. quantity

cm3/1000 strokes : 7.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

12 Volt

FULL-LOAD SPEED REGULATION

Rated speed rpm 2400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

100 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutaff solenoid Volt	:	12	+	Rated speed rpm	:	1790	
			1	Supply pomp pressure bar		8.1	
			I	Tolerance hPa	:	0.3	
LOAD-DEPENDENT ST	TART	OF DELIVERY	1	Shutoff solenoid	•	0.5	
SETTING			<u> </u>	Volt	:	12	
DELIVERY DIFFEREN	1CE		1	Rated speed rpm	:	1500	
Rated speed rpm Del. quantity	:	1500	1	Rated speed rpm	:	1250	
cm3/1000 strokes Tolerance	:	-7.0	1	Rated speed rpm Supply pomp	:	1100	
cm3/1000 strokes	•	1.0	$\perp$	pressure bar	:	6.2	
Shutoff solenoid	•		1	Tolerance hPa	:	0.3	
Volt	:	12	+	Shutoff solenoid			
			+	Volt	:	12	
PRESSURE DIFFEREN	ICE		†	OVEREL OU OHANTITY			
Rated speed rpm	:	1500	Ī	OVERFLOW QUANTITY			
Del. quantity	•	1500	1	Rated speed rpm	:	2100	
cm3/1000 strokes	:	-0.2	+	Overflow quantity			
Tolerance			+	ccm/10s	:	97.2	
cm3/1000 strokes	:	0.1	+	Tolerance		10.1	
Shutoff solenoid Volt		12	†	ccm/10s	:	41.6	
VOCE	•	12	I	Check tolerance			
TIMING-DEVICE TRA	VEL	DIFFERENCE	1	ccm/10s	:	55.5	
			+	Shutoff solenoid			
Rated speed rpm	:	1500	+	Volt	:	12	
Del. quantity cm3/1000 strokes		-1.2	†	Dated aread non		600	
Tolerance	•	-1,2	I	Rated speed rpm Overflow quantity	•	000	
cm3/1000 strokes	:	0.1	<u> </u>	ccm/10s	:	63.8	
Shutoff solenoid			+	Tolerance			
Volt	:	12	+	ccm/10s	:	22.2	
			†	Check tolerance			
INJECTION-PUMP TE	ST	SPECIFICATIONS	I	ccm/10s	•	34.7	
11000110111011111		0. 2011 10.11 10.10	1	Shutoff solenoid	•	• (1.1	
TIMING DEVICE CHA	RAC	TERISTIC	+	Volt	:	12	
Rated speed rpm	:	1790	1	DELIVERY AND BREAK	ΔΙ.ΙΔ	A CHVDVC.	TEDICTIC
Tolerance mm	:	0.4	I	AFFIAFUL MAN DEFEN	.~W^	I COMMAC	I FI/TO I T
Check	•	<b>5.</b> ,	1	Rated speed rpm	:	2400	
tolerance mm	:	0.7	+	Del. quantity			
Shutoff solenoid		4.4	+	cm3/1000 strokes	:	12.0	
Volt	:	12	†	Tolerance cm3/1000 strokes		2.0	
Rated speed rpm	:	1100	I	Check tolerance	:	۷.0	
nated speed (pill	•	. 100	Ţ	cm3/1000s.	:	4.0	
SV travel mm	:	1.6	+	Shutoff solenoid			
Tolerance mm	:	0.4	+	Volt	:	12	
Check		0.7	†	Data dans at a		2700	
tolerance mm Shutoff solenoid	:	0.7	<u> </u>	Rated speed rpm Del. quantity	:	2300	
Volt	:	12	I	cm3/1000 strokes	:	22.0	
			+	Tolerance			
SUPPLY PUMP PRESS	URE	CHARACTERISTIC	+	cm3/1000 strokes	:	5.0	

Check tolerance			+ Del. quantity
cm3/1000s.	:	6.0	+ cm3/1000 strokes : 1.5
Shutoff solenoid Volt	;	12	+ Tolerance + cm3/1000 strokes : 1.5
		2/22	+ Check tolerance
Rated speed rpm Del. quantity	:	2600	+ cm3/1000s. : 1.5 + Spread
cm3/1000 strokes	:	3.0	cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes		3.0	+ + FULL-LOAD STOP CONTROL LEVER
Check tolerance	•		TOLL EDAD STOP CONTROL LEVER
cm3/1000s.	:	3.0	Rated speed rpm : 415
Shutoff solenoid Volt	:	12	+ Del. quantity + cm3/1000 strokes : 1.5
Bornel on order		2400	+ Tolerance
Rated speed rpm Del. quantity	;	2100	+ cm3/1000 strokes : 1.5 + Spread
cm3/1000 strokes	:	29.5	+ cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes		1.0	+ Check tolerance + cm3/1000s. : 1.5
Check tolerance	•		+ Spread
cm3/1000S. Shutoff solenoid	:	2.2	+ cm3/1000 strokes : 5.0
Volt	:	12	Ī
Dated award was		1850	+
Rated speed rpm Del. quantity	•	1030	RESIDUAL QUANTITY
cm3/1000 strokes	:	32.5	100
Tolerance cm3/1000 strokes	:	3.0	+ Rated speed rpm : 490 + Del. quantity
Shutoff solenoid	•		+ cm3/1000 strokes : 7.8
Volt	:	12	+ Tolerance + cm3/1000 strokes : 1.0
Rated speed rpm	:	600	+ Check tolerance
Del. quantity cm3/1000 strokes		33.3	+ cm3/1000s. : 2.5 + Shutoff solenoid
Tolerance	•		+ Volt : 12
cm3/1000 strokes Check tolerance	:	1.5	<u>†</u>
cm3/1000s.	:	3.0	
Shutoff solenoid Volt		12	+ CHECKING LOAD-DEPENDENT + START OF DELIVERY
VOLE	•	12	+ START OF DELIVERT
Rated speed rpm	:	1250	DELIVERY DIFFERENCE
Del. quantity cm3/1000 strokes	:	35.5	Rated speed rpm : 1500
Tolerance			+ Del. quantity
cm3/1000 strokes Check tolerance	:	0.5	+ cm3/1000 strokes : -10.5 + Tolerance
cm3/1000s.	:	2.2	+ cm3/1000 strokes : 3.0
Shutoff solenoid Volt	•	12	+ Check tolerance + cm3/1000S. : 4.0
	•	, -	+ Shutoff solenoid
			+ Volt : 12
ELECTR. SHUTOFF	_	_	TIMING-DEVICE TRAVEL DIFFERENCE
CONTROL LEVER, IDE	E S	STOP	+ Rated speed rpm : 1500
Rated speed rpm	:	415	Del. quantity
			+ cm3/1000 strokes : −1.2

Tolerance cm3/1000 strokes	: 0.1
Check tolerance cm3/1000S.	: 0.1
Shutoff solenoid Volt	: 12
DELIVERY DIFFEREN	NCE
Rated speed rpm Del. quantity	: 1500
cm3/1000 strokes Tolerance	: 1.5
cm3/1000 strokes Check tolerance	: 1.5
cm3/1000S. Shutoff solenoid	: 1.5
Volt	: 12
PRESSURE DIFFEREN	ICE
Rated speed rpm Supply pomp	: 1500
pressure bar Tolerance hPa	: -1.0 : 0.2
Shutoff solenoid Volt	: 12
TIMING-DEVICE TRA	NVEL DIFFERENCE
Rated speed rpm	: 1500
Tolerance mm Check	: 0.2
tolerance mm Shutoff solenoid	: 0.6
Volt	: 12
START TRANSITION	
Rated speed rpm Del. quantity	: 380
cm3/1000 strokes Tolerance	: 27.0
cm3/1000 strokes Shutoff solenoid	: 10.0
Volt	: 12
Rated speed rpm	: 180
Del. quantity cm3/1000 strokes	: 60.0
Tolerance cm3/1000 strokes	: 25.0
Shutoff solenoid Volt	: 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,8
Tolerance mm : +-0,2
Dimension MS mm : 1,4
Tolerance mm : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.03.96 Test oil : ISO 4113

: 0 460 403 015 Part no. Pump designation : VE3/10F1500L481

Customer-spec. information

Customer : VM

: HR 394 HT Motor Power KW 51.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : Tolerance °C

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 450 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm Aneroid pressure	:	1200
hPa	:	1000
Setting mm Tolerance mm	:	2.6 0.2
Shutoff solenoid Volt	:	12

#### SUPPLY PUMP PRESSURE

Rated speed rpm	:	1200	
Aneroid pressure hPa	:	1000	
Setting hPa	:	5.9	
Tolerance hPa	:	0.3	
Shutoff solenoid Volt	:	12	

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm	:	1200
Aneroid pressure		
hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	67.5
Tolerance		
cm3/1000 strokes	:	0.5
Spread		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000S.	:	4.0
Shutoff solenoid		
Volt	:	12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm Del. quantity	:	600
cm3/1000 strokes	:	59.5
Tolerance cm3/1000 strokes	:	0.5
Shutoff solenoid Volt	:	12
Check tolerance cm3/1000s.	:	4.0

# IDLE SETTING

Rated speed rpm	:	400
Del. quantity		
cm3/1000 strokes	:	12.5
Tolerance		
cm3/1000 strokes	:	2.0
Shutoff solenoid		
Volt	:	12

Spread cm3/1000 strokes	: 3.5	+ Tolerance + cm3/1000 strokes	: 0.1
Check tolerance cm3/1000s.	: 3.5	+ Shutoff solenoid + Volt	: 12
		+	
FULL-LOAD SPEED RE	EGULATION	INJECTION-PUMP TE	ST SPECIFICATIONS
Rated speed rpm	: 1570	TIMING DEVICE CHA	RACTERISTIC
Pressure hPa Del. quantity	: 1000	+ Rated speed rpm	: 1500
cm3/1000 strokes	: 50.0	+ Aneroid pressure	
Tolerance cm3/1000 strokes	: 3.0	+ hPa +	: 1000
Shutoff solenoid	. 13	+ SV travel mm	3.9
Volt	: 12	+ Tolerance mm + Check	: 0.4
STARTING FUEL DELI	EVERY	+ tolerance mm	: 0.7
Rated speed rpm	: 100	+ Shutoff solenoid + Volt	: 12
Del. quantity		+	
cm3/1000 strokes Tolerance	: 85.0	+ Rated speed rpm + Aneroid pressure	: 1000
cm3/1000 strokes	: 25.0	hPa	: 1000
Shutoff solenoid Volt	: 12	T SV travel mm	: 1.7
	_	+ Tolerance mm	: 0.4
		+ Check + tolerance mm	: 0.7
LOAD-DEPENDENT STA	ART OF DELIVERY	+ Shutoff solenoid	
SETTING		† Volt	: 12
DELIVERY DIFFERENCE	E	SUPPLY PUMP PRESS	URE CHARACTERISTIC
Rated speed rpm Del. quantity	: 1200	Rated speed rpm Aneroid pressure	: 1500
cm3/1000 strokes	: -7.0	+   hPa	: 1000
Tolerance cm3/1000 strokes	: 1.0	+ Supply pomp + pressure bar	: 7.2
Shutoff solenoid	. 1.0	+ Tolerance hPa	: 0.3
Volt	: 12	+ Shutoff solenoid	40
PRESSURE DIFFERENC	F	+ Volt	: 12
		Rated speed rpm	: 750
Rated speed rpm Aneroid pressure	: 1200	+ Aneroid pressure + hPa	: 1000
hPa	: 1000	+ Supply pomp	
Del. quantity cm3/1000 strokes	: -0.2	+ pressure bar + Tolerance hPa	: 4.1 : 0.3
Tolerance		+ Shutoff solenoid	
cm3/1000 strokes	: 0.1	† Volt	: 12
Shutoff solenoid Volt	: 12	T OVERFLOW QUANTITY	
TIMING-DEVICE TRAV	EL DIFFERENCE	Rated speed rpm	: 1500
	: 1200	+ Aneroid pressure + hPa	: 1000
Del. quantity cm3/1000 strokes	: -0.9	+ Overflow quantity + ccm/10s	: 97.2
1.100 Strokes		+	

Tolerance ccm/10s	: 41.6	+ Rated speed rpm : 1500 + Aneroid pressure
Check tolerance	. 41.0	├ hPa : 1000
ccm/10s	: 41.6	Del. quantity cm3/1000 strokes : 65.5
Shutoff solenoid Volt	: 12	Tolerance cm3/1000 strokes : 1.5
Rated speed rpm	: 750	+ Check tolerance - cm3/1000s. : 3.0
Aneroid pressure	: 1000	+ Shutoff solenoid + Volt : 12
Overflow quantity ccm/10s	, : 62.5	Rated speed rpm : 750
Tolerance ccm/10s	: 20.8	+ Del. quantity + cm3/1000 strokes : 57.5 + Tolerance
Check tolerance	: 20.8	cm3/1000 strokes : 2.0 Shutoff solenoid
Shutoff solenoid Volt	: 12	Volt : 12
	KAWAY CHARACTERISTIC	Rated speed rpm : 750 Aneroid pressure
Rated speed rpm	: 1570	hPa : 1000 Del. quantity
Aneroid pressure	: 1000	cm3/1000 strokes : 68.0 Tolerance
Del. quantity cm3/1000 strokes		- cm3/1000 strokes : 1.5 Check tolerance
Tolerance cm3/1000 strokes		- cm3/1000s. : 3.0 - Shutoff solenoid
Check tolerance cm3/1000S.	: 6.5	Volt : 12
Shutoff solenoid Volt	: 12	Rated speed rpm : 1200 Aneroid pressure
	: 1670	hPa : 1000 Del. quantity
Aneroid pressure	: 1000	cm3/1000 strokes : 67.5
Del. quantity cm3/1000 strokes	: 1.5	cm3/1000 strokes : 0.5 Check tolerance
Check tolerance cm3/1000s.	: 1.5	cm3/1000s. : 3.0 Shutoff solenoid
Shutoff solenoid Volt	: 12	Volt : 12
Rated speed rpm	: 750	<u></u>
Aneroid pressure	: 350	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
LDA/	. 330	Rated speed rpm : 400
HBA stroke mm Del. quantity	: 5.0	Del. quantity  cm3/1000 strokes : 1.5
cm3/1000 strokes Tolerance	: 62.0	Tolerance cm3/1000 strokes : 1.5
cm3/1000 strokes Check tolerance	: 0.5	Check tolerance cm3/1000s. : 1.5
cm3/1000S. Shutoff solenoid	: 3.0	Spread + cm3/1000 strokes : 5.0
Volt	: 12	FULL-LOAD STOP CONTROL LEVER
		I OUT TOUR OLD COLLINGE FEACH

		1
Dated coded nom	: 400	+ Tolerance + cm3/1000 strokes : 0.1
Rated speed rpm Del. quantity	. 400	+ Check tolerance
cm3/1000 strokes	; 1.5	cm3/1000s. : 0.1
Tolerance	, ,,,,	+ Shutoff solenoid
cm3/1000 strokes	: 1.5	+ Volt : 12
Spread	•	1
cm3/1000 strokes	: 5.0	→ DELIVERY DIFFERENCE
Check tolerance		1
cm3/1000s.	: 1.5	+ Rated speed rpm : 1200
Spread		+ Del. quantity
cm3/1000 strokes	: 5.0	+ cm3/1000 strokes : 5.0
		† Tolerance
IDLE DELIVERY		+ cm3/1000 strokes : 2.0
		+ Shutoff solenoid
Rated speed rpm	: 440	+ Volt : 12
Del. quantity		+
cm3/1000 strokes	: 5.0	+ TIMING-DEVICE TRAVEL DIFFERENCE
Tolerance		+
cm3/1000 strokes	: 3.0	+ Rated speed rpm : 1200
Check tolerance		†
cm3/1000s.	: 4.0	+ SV travel mm : -1.7
Shutoff solenoid	. 40	+ Tolerance mm : 0.4
Volt	: 12	+ Shutoff solenoid
D-+	. 550	+ Volt : 12
Rated speed rpm	: 550	<b>†</b>
Del. quantity cm3/1000 strokes	: 1.5	T START TRANSITION
Tolerance	, (,)	I START TRANSPITON
cm3/1000 strokes	: 1.5	Rated speed rpm : 450
Check tolerance	• 1.5	Del. quantity
cm3/1000s.	: 1.5	- cm3/1000 strokes : 60.0
Shutoff solenoid	. ,,,,	+ Tolerance
Volt	: 12	+ cm3/1000 strokes : 10.0
		+ Shutoff solenoid
		+ Volt : 12
		<del>}</del>
		+
	<del></del>	
CHECKING LOAD-DEP		+ Del. quantity
START OF DELIVERY		+ cm3/1000 strokes : 85.0
	•	+ Tolerance
DELIVERY DIFFEREN	UE	+ cm3/1000 strokes : 25.0
Dadad awasa was	. 1200	+ Shutoff solenoid
Rated speed rpm	: 1200	† Volt : 12
Del. quantity cm3/1000 strokes	14 0	Ī
Tolerance	10.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes	; 4.0	TOOLINE AND ADDOUGHEN DILIENSTONS
Check tolerance	, 7.0	$oldsymbol{\downarrow}$
cm3/1000s.	: 4.0	LDA/
Shutoff solenoid	7.0	+ HBA stroke mm : 5.0
Volt	: 12	Dimension K mm : 3.3
	, , ,	+ Tolerance mm : +-0,1
TIMING-DEVICE TRAN	/EL DIFFERENCE	+ Dimension KF mm : 6,0,
		+ Tolerance mm : +-0,2
Rated speed rpm	: 1200	+ Dimension MS mm : 0.8
Del. quantity		+ Tolerance mm : +-0,2
cm3/1000 strokes	: -0.9	+
		1

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.12.95 Test oil : ISO 4113

Part no. : 0 460 404 075 Pump designation : VE4/10F2100L503

Customer-spec. information

Customer : VM

Motor : HR 425 SLIRF Power KW : 90.0

TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 500

Aneroid pressure

hPa : 1000

Setting mm : 7.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 500

Aneroid pressure

hPa : 1000

Setting hPa : 5.9 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500

Aneroid pressure

hPa : 1000

Del. quantity cm3/1000 strokes : 66.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.0 Check tolerance

cm3/1000s. :

Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

3.0

12

Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 42.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt : 12

Check tolerance

cm3/1000s. : 3.0

IDLE SETTING

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid Volt :

Spread

cm3/1000 strokes : 3.0

Check tolerance cm3/1000s. : 3.0

FULL-LOAD SPEED F	REGULATION	+ Shutoff solenoid
Rated speed rpm Pressure hPa	: 2300 : 1000	Volt : 12 Timing device
Del. quantity cm3/1000 strokes		solenoid Volt : 100
Tolerance cm3/1000 strokes		Rated speed rpm : 1000 Aneroid pressure
Shutoff solenoid Volt	: 12	hPa : 1000
		+ SV travel mm : 9.0
STARTING FUEL DEL		+ Tolerance mm : 0.5 + Check
Rated speed rpm Del. quantity	: 100	tolerance mm : 0.7 Shutoff solenoid
cm3/1000 strokes Tolerance	: 65.0	+ Volt : 12
cm3/1000 strokes Shutoff solenoid		Rated speed rpm : 1000 Aneroid pressure
Volt	: 12	hPa : 1000
		+ SV travel mm : 0.3
		+ Tolerance mm : 0.3 + Check
INJECTION-PUMP TE	ST SPECIFICATIONS	+ tolerance mm : 0.3 + Shutoff solenoid
=		† Volt : 12
TIMING DEVICE CHA		Timing device
Rated speed rpm Aneroid pressure	: 2100	solenoid Volt : 100
hPa	: 1000	SUPPLY PUMP PRESSURE CHARACTERISTIC
SV travel mm	: 9.8	+ Rated speed rpm : 2100
Tolerance mm Check	: 0.5	+ Aneroid pressure + hPa : 1000
tolerance mm Shutoff solenoid	: 0.7	+ Supply pomp + pressure bar : 8.0
Volt	: 12	+ Tolerance hPa : 0.3 + Shutoff solenoid
Rated speed rpm Aneroid pressure	: 150	+ Volt : 12
hPa	: 1000	+ Rated speed rpm : 150 + Aneroid pressure
SV travel mm Tolerance mm	: 5.5 : 1.8	+ hPa : 1000 + Supply pomp
Check		+ pressure bar : 4.8
tolerance mm Shutoff solenoid	: 1.8	+ Tolerance hPa : 0.8 + Shutoff solenoid
Volt		
	: 12	Volt : 12
Rated speed rpm	: 12 : 2100	Volt : 12 Rated speed rpm : 1000
Rated speed rpm Aneroid pressure hPa		Volt : 12 Rated speed rpm : 1000 Aneroid pressure hPa : 1000
Aneroid pressure hPa	: 2100	Volt : 12  Rated speed rpm : 1000  Aneroid pressure
Aneroid pressure hPa SV travel mm Tolerance mm	: 2100 : 1000	Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.5 Tolerance hPa : 0.3
Aneroid pressure hPa SV travel mm	: 2100 : 1000 : 0.5	Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.5

			+	Check tolerance			
OVERFLOW QUANTITY			†	cm3/1000s. Shutoff solenoid	:	2.5	
Rated speed rpm Aneroid pressure	: 7	00	Ŧ	Volt	:	12	
hPa		1000	Ŧ	Rated speed rpm	:	2100	
Overflow quantity ccm/10s	:	83.3	Ŧ	Aneroid pressure hPa	:	1000	
Tolerance ccm/10s	:	55.5	Ŧ	Del. quantity cm3/1000 strokes Tolerance	:	63.5	
Check tolerance		55.5	Ŧ	cm3/1000 strokes	:	1.5	
ccm/10s Shutoff solenoid	•	12	Ŧ	Check tolerance cm3/1000s.	:	3.0	
Volt	. 21		Ŧ	Shutoff solenoid Volt	:	12	
Rated speed rpm Aneroid pressure			Ŧ	Rated speed rpm	:	700	
hPa Overflow quantity		1000	+	Aneroid pressure hPa	:	1000	
ccm/10s Tolerance ccm/10s		11.1 55.5	Ŧ	Del. quantity cm3/1000 strokes	:	69.0	
Check tolerance	:	)),)	Ŧ	Tolerance cm3/1000 strokes Check tolerance	:	1.5	
ccm/10s Shutoff solenoid	:	55.5	Ŧ	cm3/1000S. Shutoff solenoid	:	3.0	
Volt	:	12	Ī	Volt	:	12	
DELIVERY AND BREAK	KAWAY C	HARACTERISTIC	I	Rated speed rpm Aneroid pressure	:	1500	
Rated speed rpm Aneroid pressure	: 23	00	Ì	hPa Del. quantity	:	1000	
hPa Del. quantity	:	1000	+	cm3/1000 strokes Tolerance	:	66.0	
cm3/1000 strokes Tolerance	:	38.0	1	cm3/1000 strokes Check tolerance	:	0.5	
cm3/1000 strokes Check tolerance	:	3.0	1	cm3/1000s. Shutoff solenoid	:	2.0	
cm3/1000s. Shutoff solenoid	:	4.0	+	Volt	:	12	
Volt	:	12	+				
Rated speed rpm Aneroid pressure	: 24		‡	ELECTR. SHUTOFF CONTROL LEVER, ID	LE S	TOP	
hPa Del. quantity	:	1000	‡	Rated speed rpm	:	450	
cm3/1000 strokes Check tolerance	:	7.5	‡	Del. quantity cm3/1000 strokes	:	1.5	
cm3/1000S. Shutoff solenoid	:	4.0	‡	Tolerance cm3/1000 strokes	:	1.5	
Volt	:	12	‡	Check tolerance cm3/1000s.	:	1.5	
Rated speed rpm Aneroid pressure	: 70		+	TOLE DELIVERY			
hPa Del. quantity	:	400	‡	IDLE DELIVERY		000	
cm3/1000 strokes Tolerance		54.0	+	Rated speed rpm Del. quantity	:	800	
cm3/1000 strokes	:	0.5	+	cm3/1000 strokes	:	4.0	

lolerance		
cm3/1000 strokes	:	2.5
Check tolerance cm3/1000s. Shutoff solenoid	:	4.0
Volt	:	12
Rated speed rpm Del. quantity	:	500
cm3/1000 strokes	:	6.0
Tolerance cm3/1000 strokes Check tolerance	:	2.5
cm3/1000s.	:	5.0
Shutoff solenoid Volt	:	12

EXHAUST-GAS RECIR	CUL	ATION	
Rated speed rpm	:	1000	
Aneroid pressure hPa	:	1000	
Del. quantity cm3/1000 strokes	:	50.0	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	1.0	
	:	2.5	
Shutoff solenoid Volt	:	12	
START TRANSITION			
Rated speed rpm Del. quantity	:	550	
cm3/1000 strokes Tolerance	:	40.0	
cm3/1000 strokes Shutoff solenoid	:	10.0	
Volt	:	12	
Rated speed rpm	:	400	
Del. quantity cm3/1000 strokes	:	65.0	
Tolerance cm3/1000 strokes	:	17.0	
Shutoff solenoid Volt	:	12	
ASSEMBLY AND ADJU	STM	ENT DIMENSIONS	

ADDELIGET MAN ADOCCITIENT DELICITORION	ASSEMBLY	AND	ADJUSTMENT	DIMENSION
--	----------	-----	------------	-----------

Dimension K mm : 3,7 Tolerance mm : +-0,1

Dimension KF mm	: 5,2
Tolerance mm	: +-0,2
KSB travel mm	: 8,5

POTENTIOMETER

SET

1. measurement voltage Volt : 5,0 1. measurement

voltage Volt : 2,31

MICROSWITCH

SET

man : ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 43.2..45,2

Control lever

position YB mm : 23,5..30,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.04.95 Test oil

: ISO 4113

Part no. : 0 460 404 083 Pump designation: VE4/10F2100L503-1

Customer-spec. information : VM Customer

: HR 425 SLIRF Motor

85.0 Power KW

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm 0.75

0.35 Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 500 Aneroid pressure

hPa 1000

7.7 Setting mm Tolerance mm 0.2 Shutoff solenoid

Volt 12

## SUPPLY PUMP PRESSURE

Rated speed rpm 500

Aneroid pressure

hPa 1000

5.9 Setting hPa Tolerance hPa 0.3 Shutoff solenoid

12 Volt

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

1500 Rated speed rpm :

Aneroid pressure

1000 hPa

Del. quantity

cm3/1000 strokes : 66.0 Tolerance

cm3/1000 strokes :

0.5 Spread

cm3/1000 strokes : 3.0 Check tolerance

cm3/1000s.Shutoff solenoid

3.0

Volt

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm 700

Del. quantity

cm3/1000 strokes : 42.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s. 3.0

#### IDLE SETTING

Rated speed rpm 450

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

Spread cm3/1000 strokes	•	3.0	+Tolerance mm+Check	:	0.5
Check tolerance cm3/1000s.	•	3.0	tolerance mm Shutoff solenoid	:	0.5
Chs/1000s.	•	5.0	+ Volt	:	12
FULL-LOAD SPEED I	REGUI	LATION	Timing device solenoid Volt	:	100
Rated speed rpm	:	2300	+		
Pressure hPa Del. quantity	:	1000	+ Rated speed rpm + Aneroid pressure		1000
cm3/1000 strokes Tolerance	:	38.0	hPa	:	1000
cm3/1000 strokes	•	3.0	SV travel mm	:	9.0
Shutoff solenoid	•	0.0	+ Tolerance mm	•	0.5
Volt	:	12	+ Check	•	
STARTING FUEL DEL	IVE	RY	tolerance mm Shutoff solenoid	:	0.7
		4.5.5	+ Volt	:	12
Rated speed rpm	;	100	†		4000
Del. quantity cm3/1000 strokes	:	65.0	+ Rated speed rpm + Aneroid pressure		
Tolerance		47.0	+ hPa	:	1000
cm3/1000 strokes	:	17.0	† OV A		0.7
Shutoff solenoid		40	+ SV travel mm	•	0.3
Volt	:	12	† Tolerance mm	:	0.3
			+ Check		0.7
			+ tolerance mm	. :	0.3
			+ Shutoff solenoid + Volt	1	12
INJECTION-PUMP TE TIMING DEVICE CHA			ONS + Timing device + solenoid Volt	:	100
			SUPPLY PUMP PRES	SURE	CHARACTERISTI
Rated speed rpm	:	2100	+		
Aneroid pressure			+ Rated speed rpm		2100
hPa	:	1000	+ Aneroid pressure	•	
Tolerance mm	:	0.5	+ hPa	:	1000
Check			+ Supply pomp		
tolerance mm	:	F1 7	+ pressure bar		0.0
Shutoff solenoid		0.7	) <del>~ )   ~ </del>	:	8.0
Volt	-		+ Tolerance hPa	:	8.0 0.3
Rated speed rpm	:	12	+ Shutoff solenoid	:	0.3
Aneroid pressure	:			:	
	•	12	Shutoff solenoid Volt	:	0.3
	•	12	+ Shutoff solenoid	:	0.3 12
hPa	:	12 150	Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa	:	0.3 12
hPa	:	12 150 1000 5.5	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp	:	0.3 12 150 1000
hPa SV travel mm Tolerance mm		12 150 1000	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar	:	0.3 12 150 1000 4.8
hPa SV travel mm Tolerance mm Check	:	12 150 1000 5.5 1.8	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa	:	0.3 12 150 1000
hPa SV travel mm Tolerance mm Check tolerance mm	:	12 150 1000 5.5	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid	:	0.3 12 150 1000 4.8 0.8
hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	:	12 150 1000 5.5 1.8 1.8	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa	:	0.3 12 150 1000 4.8
hPa SV travel mm Tolerance mm Check tolerance mm		12 150 1000 5.5 1.8 1.8	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt  Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	0.3 12 150 1000 4.8 0.8
hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid		12 150 1000 5.5 1.8 1.8	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	: : : : : : : : : : : : : : : : : : : :	0.3 12 150 1000 4.8 0.8 12
hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid		12 150 1000 5.5 1.8 1.8 12 2100	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa	: : : : : : : : : : : : : : : : : : : :	0.3 12 150 1000 4.8 0.8
hPa  SV travel mm  Tolerance mm  Check tolerance mm  Shutoff solenoid Volt  Rated speed rpm  Aneroid pressure		12 150 1000 5.5 1.8 1.8	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp	: : : : : : : : : : : : : : : : : : : :	0.3 12 150 1000 4.8 0.8 12 1000
hPa  SV travel mm  Tolerance mm  Check tolerance mm  Shutoff solenoid  Volt  Rated speed rpm  Aneroid pressure  hPa		12 150 1000 5.5 1.8 1.8 12 2100	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar	: : : : : : : : : : : : : : : : : : : :	0.3 12 150 1000 4.8 0.8 12 1000 1000
The strated man Folerance man Check tolerance man Shutoff solenoid Folerance rom Rated speed rpm Aneroid pressure		12 150 1000 5.5 1.8 1.8 12 2100	Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp	: : : : : : : : : : : : : : : : : : : :	0.3 12 150 1000 4.8 0.8 12 1000

Shutoff solenoid		+ Aneroid	pressure		
Volt	: 12	+ hPa	•	: 400	
		+			
OVERFLOW QUANTITY		+ LDA/			
		+ HBA str	oke mm	: 6.7	
Rated speed rpm	: 2100	Del. qu			
Aneroid pressure	. 2.00		_ ` .	: 54.0	
hPa	: 1000	Toleran		. 54.0	
Overflow quantity			0 strokes	: 0.5	
ccm/10s	: 111.1		olerance	. 0.5	
Tolerance		cm3/100		: 2.5	
	; 55,5			: 2.3	
ccm/10s	, 25.5		solenoid	. 43	
Objects to Language		+ Volt		: 12	
Check tolerance		†		2402	
ccm/10s	: 55.5			: 2100	
Shutoff solenoid			pressure		
Volt	: 12	+ hPa		: 1000	
		+ Del. qui			
Rated speed rpm	: 700		O strokes	: 63.5	
Aneroid pressure		+ Tolerand			
hPa	: 1000		D strokes	: 1.5	
Overflow quantity			olerance		
ccm/10s	: 83.3	+ cm3/1000		: 3.0	
Tolerance		+ Shutoff	solenoid		
ccm/10s	: 55.5	→ Volt	:	: 12	
		+			
Check tolerance		+ Rated sp	beed rpm	: 700	
ccm/10s	: 55.5	+ Aneroid	pressure		
Shutoff solenoid		+ hPa		: 1000	
Volt	: 12	🕂 Del. qua	antity		
			🕽 strokes :	: 69.0	
DELIVERY AND BREAK	KAWAY CHARACTERISTI	Tolerand	ce		
			] strokes	: 1.5	
Rated speed rpm	: 2300		olerance		
Aneroid pressure		+ cm3/1000		: 3.0	
hPa	: 1000		solenoid		
Del. quantity		+ Volt	3	: 12	
cm3/1000 strokes	: 38.0	1	·		
Tolerance	. 20.0	→ Rated sr	beed rpm :	: 1500	
	: 3.0		pressure	. 1300	
Check tolerance		+ hPa	יים מיטים אין	: 1000	
cm3/1000s.	: 4.0	Del. qua	antity '	. 1000	
Shutoff solenoid	· +.0		strokes :	: 66.0	
Volt	: 12	Tolerand			
VOCC	• 16		) strokes :	: 0.5	
Rated speed rpm	: 2460		olerance .	. 0,5	
Aneroid pressure		- cm3/1000		: 2.0	
hPa	: 1000		solenoid	. ε.υ	
Del. quantity	• 1000	T Volt	SOLEHOTU .	: 12	
	: 7.5	I	•	· 1 <u>6</u>	
Check tolerance		I			
cm3/1000s.	: 4.0	Ι			
Shutoff solenoid	4.0	I	SHUTOFF		
	: 12	•		9072	
Volt	. 14	T CONTROL	LEVER, IDLE	31UF	
Pated speed spe	: 700	I Potod or	eed rom :	450	
Rated speed rpm	: 700			, 4)U	
		+ Del. qua	ntity )strokes :	1.5	
		+ CM3/100C		1.7	
			:e ) strokes :	1.5	
		T (1113) (000	SUIUKES :	1.2	

Check tolerance cm3/1000S.	:	1.5	
Spread		5.5	
cm3/1000 strokes	:	5.0	
FULL-LOAD STOP CO	NTR	OL LEVER	
Rated speed rpm Del. quantity	:	450	
cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 strokes	:	1.5	
Spread cm3/1000 strokes	:	5.0	
Check tolerance	•	5.0	
cm3/1000s.	:	1.5	
Spread cm3/1000 strokes	:	5.0	
IDLE DELIVERY			
	:	800	
Del. quantity cm3/1000 strokes	:	4.0	
Tolerance cm3/1000 strokes	:	2.5	
Check tolerance cm3/1000s.	:	4.0	
Shutoff solenoid	•	4.0	
Volt	:	12	
Rated speed rpm	:	500	
Del. quantity cm3/1000 strokes	:	6.0	
Tolerance cm3/1000 strokes	:	2.5	
Check tolerance cm3/1000s.	:	5.0	
Shutoff solenoid		12	
Volt	•	12	
		<del></del>	·
EXHAUST-GAS RECIR	CULA	ATION	
Rated speed rpm	:	1000	
Aneroid pressure		4000	

1000

50.0

1.0

2.5

12

# Rated speed rpm 550 Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 strokes 10.0 Shutoff solenoid Volt 12 Rated speed rpm 400 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes 17.0 Shutoff solenoid Volt 12 ASSEMBLY AND ADJUSTMENT DIMENSIONS LDA/ HBA stroke mm 6.7 : 3,3 Dimension K mm : +-0,1 Tolerance mm Dimension KF mm : 5,4 Tolerance mm : +-0,2 Dimension MS mm : 0,8 Tolerance mm : +-0,2 POTENTIOMETER SET 1. measurement voltage Volt : 5,0 1. measurement voltage Volt : 2,31 **MICROSWITCH** SET : ARF 12,0 CONTROL LEVER POSITION SET Control lever position YA mm : 43,2..45,2 Control lever position YB mm : 23,5..30,5

End of test-specification sheet

START TRANSITION

Volt

hPa

Tolerance

Del. quantity cm3/1000 strokes :

cm3/1000 strokes :

Check tolerance cm3/1000s.

Shutoff solenoid

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 28.06.93 Edition : ISO 4113 Test oil

Part no. : 0 460 414 101 Pump designation : VE4/11F1900L519

Customer-spec. information : PENTA Customer : TAMD 31 Motor 96.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 55 Tolerance °C 1

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

250 bar Tolerance bar 3

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 840 x length mm :

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,3 Tolerance mm : +-0,02

Check

: +-0,04 tolerance mm

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1500

Aneroid pressure

1000 hPa

Setting mm 2.0 Tolerance mm 0.2

SUPPLY PUMP PRESSURE

Rated speed rpm 1500 :

Aneroid pressure

1000 hPa

6.7 Setting hPa Tolerance hPa 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1500

Aneroid pressure

hPa 1000

Del. quantity cm3/1000 strokes : 57.0 Tolerance

cm3/1000 strokes :

Spread

cm3/1000 strokes :

Check tolerance

cm3/1000s. 5.0

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

0.5

5.0

Rated speed rpm 650

Del. quantity cm3/1000 strokes : 35.0

Tolerance

cm3/1000 strokes : 0.5

Check tolerance

cm3/1000s. 5.0 :

IDLE SETTING

300 Rated speed rpm

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : 2.0

Spread

cm3/1000 strokes : 6.0

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Check tolerance cm3/1000s.	: REGUL	6.0 ATION		+ + + + + +	Supply pomp pressure bar Tolerance hPa OVERFLOW QUANTITY	:	4.1 0.3	
Rated speed rpm		2150		1	Rated speed rpm		650	
Pressure hPa Del. quantity	:	1000		‡	Overflow quantity ccm/10s		63.8	
cm3/1000 strokes Tolerance	:	22.0		‡	Tolerance ccm/10s	:	22.2	
cm3/1000 strokes		3.0		‡	Check tolerance			
STARTING FUEL DEL	.IVER	Y		‡	ccm/10s	:	22.2	
Rated speed rpm Del. quantity	:	100		‡	Rated speed rpm Aneroid pressure	:	1900	
cm3/1000 strokes Tolerance		45.0		+	hPa Overflow quantity	:	1000	
cm3/1000 strokes	:	25.0		<del> </del>	ccm/10s Tolerance	:	97.2	
				<del> </del>  -	ccm/10s	:	41.6	
THE CONTROL OF THE				+	Check tolerance ccm/10s	:	41.6	
INJECTION-PUMP TE			TONS	‡	DELIVERY AND BREAK	<awa< td=""><td>Y CHARACTE</td><td>RISTIC</td></awa<>	Y CHARACTE	RISTIC
TIMING DEVICE CHA	RACT		•	‡	Rated speed rpm	:	2150	
Rated speed rpm Aneroid pressure	:	1900		‡	Aneroid pressure hPa	:	1000	
hPa	:	1000		‡	Del. quantity cm3/1000 strokes	:	22.0	
SV travel mm Tolerance mm	: :	4.4 0.4		†	Tolerance cm3/1000 strokes	:	3.0	
Check tolerance mm	:	0.7	•	†	Check tolerance cm3/1000S.	:	4.0	
Rated speed rpm		1700	-	‡	Rated speed rpm	:	2250	
Aneroid pressure hPa	:	1000	-	‡	Aneroid pressure hPa	:	1000	
SV travel mm Tolerance mm	:	3.1 0.5	-	Ŧ	Del. quantity cm3/1000 strokes Tolerance	:	1.5	
Check tolerance mm	•	0.7	-	ł	cm3/1000 strokes Check tolerance	:	1.5	
SUPPLY PUMP PRESS			-	$\frac{1}{1}$	cm3/1000s.	:	1.5	
Rated speed rpm		1900	-	$\frac{1}{1}$	Rated speed rpm Aneroid pressure	:	900	
Aneroid pressure	:	1000	-	I	hPa	:	300	
Supply pomp	•	8.0	-		LDA/ HBA stroke mm		7,5	
pressure bar Tolerance hPa	:	0.3	-	Ī	Del. quantity cm3/1000 strokes	:	47.0	
Rated speed rpm	:	750	-	<u> </u>	Tolerance cm3/1000 strokes		0.5	
Aneroid pressure hPa	:	1000			Check tolerance cm3/1000s.	:	3.0	
				ī	,	•		

Rated speed rpm	:	1900	+ Del. quantity + cm3/1000 strokes : 1.5
Aneroid pressure	•		+ Tolerance
hPa Del. quantity	:	1000	+ cm3/1000 strokes : 1.5 + Check tolerance
cm3/1000 strokes Tolerance	:	55.0	+ cm3/1000s. : 1.5 + Spread
cm3/1000 strokes	:	1.5	+ cm3/1000 strokes : 5.0
Check tolerance cm3/1000s.	:	3.0	+ Shutoff solenoid + Volt : 12
Rated speed rpm	:	1200	<del>†</del>
Aneroid pressure hPa	•	1000	+ IDLE DELIVERY
Del. quantity	•		Rated speed rpm : 400
cm3/1000 strokes Tolerance		58.5	<pre>+ Del. quantity + cm3/1000 strokes : 1.5</pre>
cm3/1000 strokes	:	2.5	+ Tolerance + cm3/1000 strokes : 1.5
Rated speed rpm	:	750	+ Check tolerance
Aneroid pressure hPa	:	1000	+
Del. quantity cm3/1000 strokes	:	58.5	+ Rated speed rpm : 250 + Del. quantity
Tolerance cm3/1000 strokes		2.5	cm3/1000 strokes : 23.0 Tolerance
			cm3/1000 strokes : 6.0
Rated speed rpm Aneroid pressure	:	1500	‡
hPa Del. quantity	:	1000	‡
cm3/1000 strokes	:	57.0	+
Tolerance cm3/1000 strokes	:	0.5	T START TRANSITION
Check tolerance cm3/1000s.	:	2.5	+ Rated speed rpm : 500
			Del. quantity cm3/1000 strokes : 35.0
MECHANICAL SHUTOF	F		+ Tolerance
Rated speed rpm	:	1900	+ cm3/1000 strokes : 15.0
Aneroid pressure hPa	:	1000	Rated speed rpm : 300
Del. quantity cm3/1000 strokes	:	1.5	<pre>pel. quantity      cm3/1000 strokes : 80.0</pre>
Tolerance cm3/1000 strokes	:	1.5	+ Tolerance + cm3/1000 strokes : 20.0
Spread cm3/1000 strokes		5.0	<u> </u>
Check tolerance	•		ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000s. Spread	:	1.5	‡
cm3/1000 strokes	:	5.0	+ LDA/ + HBA stroke mm : 7,5
ELECTR. SHUTOFF			Dimension KF mm : 5,4 Tolerance mm : +-0,2
CONTROL LEVER, ID	LE S	TOP	Dimension MS mm : 1,3
Rated speed rpm	:	300	Tolerance mm : +-0,2 SVS dimension mm : 7,5
			+

CONTROL LEVER POSITION SET

Control lever

: 37,2..39,2 position YA mm

tontrol lever
position YB mm : 53,0..61,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.07.95 Test oil : ISO 4113

Part no. : 0 460 485 031 Pump designation : VE5/8F2100L525-6

Customer-spec. information Customer : VW Motor : 2,4L SD

Power KW : 57.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 4.3 Tolerance mm : 0.2 Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Setting hPa : 7.4 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 35.5

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt :

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 540

Del. quantity

cm3/1000 strokes : 7.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid		40	†	~		4700	
Volt	:	12	†	Rated speed rpm	:	1790	
			†	Sabbly bowb		0.4	
			†	pressure bar	:	8.1	
LOAD DEDENIENT OF	- 4 -		†	Tolerance hPa	:	0.3	
LOAD-DEPENDENT ST	ARI	OF DELIVERY	†	Shutoff solenoid		40	
SETTING			†	Volt	:	12	
DEL THERY DIFFEREN	ICE		Ť	Data dana da ana		1100	
DELIVERY DIFFEREN	VCE		Ţ	Rated speed rpm	•	1100	
Dated aread are		1500	T	Supply pomp		4.3	
Rated speed rpm	:	1300	Ť	pressure bar Tolerance hPa	:	6.2 0.3	
Del. quantity cm3/1000 strokes		-7,0	Ţ	Shutoff solenoid	•	0.5	
Tolerance	•	-7.0	I	Volt		12	
cm3/1000 strokes		1.0	I	VOCC	•	12	
Shutoff solenoid	•	1.0	I	OVERFLOW QUANTITY			
Volt		12	I	OVERTEON GOARTITT			
VOCC	•	16	I	Rated speed rpm	:	2100	
PRESSURE DIFFEREN	ICE		1	Overflow quantity	-	2100	
THEODONE DITTEREN			1	ccm/10s	•	97.2	
Rated speed rpm	:	1500	1	Tolerance	•	71.6	
Del. quantity	•	1500	1	ccm/10s		41.6	
cm3/1000 strokes	•	-0.2	1	00.117 100	•	41.0	
Tolerance	•	5,2	1	Check tolerance			
cm3/1000 strokes	:	0.1	1	ccm/10s	•	55.5	
Shutoff solenoid	•	<b>5.</b> (	1	Shutoff solenoid	•	22.5	
Volt	:	12	1	Volt	:	12	
			1		•		
TIMING-DEVICE TRA	VEL	DIFFERENCE	+	Rated speed rpm	:	600	
			<del> </del>	Overflow quantity			
Rated speed rpm	:	1500	+	ccm/10s	:	63.8	
Del. quantity			+	Tolerance			
cm3/1000 strokes	:	-1.2	+	ccm/10s	:	22.2	
Tolerance			+				
cm3/1000 strokes	:	0.1	+	Check tolerance			
Shutoff solenoid			+	ccm/10s	:	34.7	
Volt	:	12	+	Shutoff solenoid			
			+	Volt	:	12	
<del></del>		<del></del>	+				
INJECTION-PUMP TE	ST	SPECIFICATIONS	†	DELIVERY AND BREAK	(AWA	AY CHARACTE	RISTIC
TIMINO DELIZOE OUA	040	TEDICTIC	†	Dahad anasal		2/00	
TIMING DEVICE CHA	KAC	1EKT21TC	†	Rated speed rpm	:	2400	
Dakad ====== ====		1700	Ť	Del. quantity		42 O	
Rated speed rpm	:	1790	†	cm3/1000 strokes	:	12.0	
Tolerance mm	:	0.4	†	Tolerance		2.0	
Check		0.7	†	cm3/1000 strokes	:	2.0	
tolerance mm	•	0.7	Ť	Check tolerance cm3/1000s.		4.0	
Shutoff solenoid		40	Ť		:	4.0	
Volt	:	12	Ť	Shutoff solenoid Volt		12	
Dated aread nom		1100	Ţ	VOLL	•	12	
Rated speed rpm	:	1100	I	Rated speed rpm	:	2300	
SV travel mm		1.6	I	Del. quantity	•	2000	
	•	0.4	I	cm3/1000 strokes		22.0	
Tolerance mm Check	•	U. <del>T</del>	I	Tolerance	•	22.0	
tolerance mm		0.7	I	cm3/1000 strokes	•	5.0	
Shutoff solenoid	•	J. 1	I	Check tolerance	•	٠.٠	
Volt	:	12	I	cm3/1000s.	:	6.0	
1000	•		1	Shutoff solenoid	•	J.J	
SUPPLY PUMP PRESS	URF	CHARACTERISTIC	1	Volt	:	12	
TOTAL TOTAL TREES			ī	· - • •	•	•	

Rated speed rpm	:	2600	+ Shutoff solenoid + Volt : 12
Del. quantity cm3/1000 strokes	•	3.0	<u> </u>
Tolerance			ELECTR. SHUTOFF
cm3/1000 strokes Check tolerance	:	3.0	CONTROL LEVER, IDLE STOP
cm3/1000s. Shutoff solenoid	:	3.0	Rated speed rpm : 415 Del. quantity
Volt	:	12	+ cm3/1000 strokes : 1.5
Rated speed rpm	:	2100	+ Tolerance + cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes	:	29.5	+ Check tolerance + cm3/1000s. : 1.5
Tolerance cm3/1000 strokes		1.0	Spread : 5.0
Check tolerance	•		+
cm3/1000S. Shutoff solenoid	:	2.2	+ FULL-LOAD STOP CONTROL LEVER
Volt	:	12	Rated speed rpm : 415 Del. quantity
Rated speed rpm	:	1850	+ cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes	:	32.5	Tolerance cm3/1000 strokes : 1.5
Tolerance cm3/1000 strokes	:	3.0	+ Spread + cm3/1000 strokes : 5.0
Shutoff solenoid			+ Check tolerance
Volt	:	12	+ cm3/1000S. : 1.5 + Spread
Rated speed rpm Del. quantity	:	600	cm3/1000 strokes : 5.0
cm3/1000 strokes Tolerance	:	33.3	<del>1</del>
cm3/1000 strokes	:	1.5	<del>-</del>
Check tolerance cm3/1000S.	:	3.0	<del></del>
Shutoff solenoid Volt		12	+ CHECKING LOAD-DEPENDENT + START OF DELIVERY
	•		+
Rated speed rpm Del. quantity	:	1250	+ DELIVERY DIFFERENCE
cm3/1000 strokes Tolerance	:	35.5	+ Rated speed rpm : 1500 + Del. quantity
cm3/1000 strokes Check tolerance	:	0.5	→ Del. quantity → cm3/1000 strokes : -10.5 → Tolerance
cm3/1000S.	:	2.2	+ cm3/1000 strokes : 3.0
Shutoff solenoid Volt	:	12	Check tolerance cm3/1000s. : 4.0
			+ Shutoff solenoid + Volt : 12
MECHANICAL SHUTOF	=		TIMING-DEVICE TRAVEL DIFFERENCE
Rated speed rpm	:	2100	+
Del. quantity cm3/1000 strokes	:	1.5	Rated speed rpm : 1500 Del. quantity
Tolerance cm3/1000 strokes			cm3/1000 strokes : -1.2 Tolerance
Check tolerance			+ cm3/1000 strokes : 0.1
cm3/1000s.	:	1.5	+ Check tolerance + cm3/1000s. : 0.1

Shutoff solenoid 12 Volt

DELIVERY DIFFERENCE

1500 Rated speed rpm : Del. quantity cm3/1000 strokes : 1.5 Tolerance

cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. 1.5

Shutoff solenoid Volt 12

PRESSURE DIFFERENCE

Rated speed rpm 1500

Supply pomp

-1.0pressure bar Tolerance hPa 0.2

Shutoff solenoid

12 Volt

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm 1500 Tolerance mm 0.2 Check

tolerance mm 0.6 Shutoff solenoid

Volt 12

START TRANSITION

Rated speed rpm 380

Del. quantity

cm3/1000 strokes : 27.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

12 Volt

Rated speed rpm 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes 25.0

Shutoff solenoid

12 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm : +-0,1 : 5,8 Dimension KF mm

Tolerance mm : +-0,2 Dimension MS mm : 1,4 : +-0,2 Tolerance mm

POTENTIOMETER

SET

1. measurement

voltage Volt : 5,0

1. measurement

voltage Volt : 0,7

CONTROL LEVER POSITION

Control lever

position YA mm : 32,8..34,8

Control lever

: 61,5..68,5 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 25.01.96 Edition : ISO 4113 Test oil

: 0 460 426 219 Part no. Pump designation: VE6/12F1950L528

Customer-spec. information Customer : PENTA Motor : KAD 42 Power KW 169.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 55 Tolerance °C

Overflow

restriction mm 0.75

0.35 Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 110 assembly

Opening pressure

250 bar Tolerance bar

Test lines : 1 680 750 000

6.00 Outside diameter :

2.00 x inside diameter: 840 x length mm

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,3 Tolerance mm : +-0,02

Check

: +-0,04 tolerance mm

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm :

1500

Aneroid pressure

: 1500

3.2 Setting mm

0.1 Tolerance mm

SUPPLY PUMP PRESSURE

Rated speed rpm 1500

Aneroid pressure

1500 hPa

Setting hPa 8.3

Tolerance hPa 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1800

Aneroid pressure

1500

Del. quantity

cm3/1000 strokes : 89.0

Tolerance

0.5 cm3/1000 strokes :

Spread

5.0

cm3/1000 strokes :

Check tolerance

5.0 cm3/1000s.

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

600 Rated speed rpm

Del. quantity

cm3/1000 strokes : 42.5

Tolerance

cm3/1000 strokes : 0.5

Check tolerance

cm3/1000s. 5.0

IDLE SETTING

Rated speed rpm 325

Del. quantity

cm3/1000 strokes : 9.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 5.0

**GO6** 

Check tolerance cm3/1000s.  FULL-LOAD SPEED R	: 5.0	† † † †	Supply pomp pressure bar Tolerance hPa	: :	7.6 0.3
Rated speed rpm	: 2180	‡	Rated speed rpm	:	600
Pressure hPa Del. quantity	: 1500	‡	Aneroid pressure hPa	:	1500
cm3/1000 strokes Tolerance		‡	Overflow quantity ccm/10s	:	111.1
cm3/1000 strokes		‡	Tolerance ccm/10s	:	22.2
STARTING FUEL DEL	IVERY	+	Oh		
Rated speed rpm Del. quantity	: 100	Ī	Check tolerance ccm/10s	:	22.2
cm3/1000 strokes Tolerance	: 62.0	<u> </u>	Rated speed rpm Aneroid pressure	:	1950
cm3/1000 strokes	: 20.0	<u> </u>	hPa Overflow quantity	:	1500
		+	ccm/10s Tolerance	:	138.8
			ccm/10s	:	41.6
INJECTION-PUMP TE	ST SPECIFICA	TIONS	Check tolerance ccm/10s	:	41.6
TIMING DEVICE CHA	RACTERISTIC	+			
Rated speed rpm	: 1800	+	DELIVERY AND BREAK		
Aneroid pressure hPa	: 1500	‡	Rated speed rpm Aneroid pressure	:	2180
01/ *********	: 4.9	+	hPa	;	1500
SV travel mm Tolerance mm	: 4.9	7	Del. quantity cm3/1000 strokes	:	12.0
Check tolerance mm	: 0.7	Ŧ	Tolerance cm3/1000 strokes	:	2.0
Rated speed rpm	: 1250	7	Check tolerance cm3/1000s.	:	6.0
Aneroid pressure hPa	: 1500	<u> </u>	Rated speed rpm Aneroid pressure	:	2050
SV travel mm Tolerance mm	: 1.4 : 0.4	Ŧ	hPa Del. quantity	:	1500
Check tolerance mm	: 0.7	Ŧ	cm3/1000 strokes Tolerance	:	65.0
SUPPLY PUMP PRESS		PISTIC	cm3/1000 strokes Check tolerance	:	7.,0
	4000	1	cm3/1000s.	:	8.0
Rated speed rpm Aneroid pressure		<del>-</del>	Rated speed rpm Aneroid pressure	:	2300
hPa Supply pomp	: 1500 : 9.2	Ŧ	hPa Del. quantity	:	1500
pressure bar Tolerance hPa	: 9.2	Ŧ	cm3/1000 strokes Tolerance	:	1.5
Rated speed rpm Aneroid pressure	: 1250	Ŧ	cm3/1000 strokes Check tolerance	:	1.5
hPa	: 1500	Ţ	cm3/1000s.	:	1.5

Rated speed rpm		800	+				
Aneroid pressure hPa	:	750	‡	MECHANICAL SHUTO	F F		
LDA/		~, <u>,</u> ,	Ŧ	Rated speed rpm	:	1953	
HBA stroke mm Del. quantity	:	7,5	‡	Aneroid pressure	:	1500	
cm3/1000 strokes Tolerance		65.0	Ŧ	Del. quantity cm3/1000 strokes	:	1.5	
cm3/1000 strokes Check tolerance		0.5	‡	Tolerance cm3/1000 strokes	:	1.5	
cm3/1000s.	:	4.0	Ŧ	Spread cm3/1000 strokes	:	5.0	
Rated speed rpm Aneroid pressure	:		‡	Check tolerance cm3/1000s.	:	1.5	
hPa Del. quantity	:	1500	‡	Spread cm3/1000 strokes	:	5.0	
cm3/1000 strokes Tolerance		88.0	‡	EL FOTO CINCTOFF			<del></del>
cm3/1000 strokes Check tolerance	:	2.0	†	ELECTR. SHUTOFF CONTROL LEVER, IC	LE S	STOP	
cm3/1000s.	:	3.5	‡	Rated speed rpm	:	325	
Rated speed rpm Aneroid pressure	:		+	Del. quantity cm3/1000 strokes	:	1.5	
hPa Del. quantity	•	1500	Ŧ	Tolerance cm3/1000 strokes	:	1.5	
cm3/1000 strokes Tolerance		79.0	Ŧ	Check tolerance cm3/1000s.	:	1.5	
cm3/1000 strokes		2.5	Ŧ	Spread cm3/1000 strokes Shutoff solenoid	:	5.0	
Rated speed rpm Aneroid pressure	•		Ŧ	Volt	:	12	
hPa Del. quantity	:	1500	Ŧ	IN E NELTWENY			
cm3/1000 strokes Tolerance		86.0	Ŧ	IDLE DELIVERY		/50	
cm3/1000 strokes Check tolerance		2.5	‡	Rated speed rpm Del. quantity	:	450	
cm3/1000s.		3.5	‡	cm3/1000 strokes Tolerance		1.5 1.5	
Rated speed rpm Aneroid pressure			Ŧ	cm3/1000 strokes Check tolerance	:	1.5	
hPa Del. quantity	:	1500 91.0	Ŧ	cm3/1000s.	•	(.5	
cm3/1000 strokes Tolerance cm3/1000 strokes		2.5	Ŧ				
Check tolerance		<b>3.</b> 5	Ŧ				
cm3/1000s. Rated speed rpm	:	1800	Ī	START TRANSITION			
Aneroid pressure	•	1500	Ŧ	Rated speed rpm Del. quantity	:	450	
hPa Del. quantity cm3/1000 strokes		89.0	Ŧ	cm3/1000 strokes Tolerance	:	40.0	
Tolerance		0.5	Ŧ	cm3/1000 strokes	:	15.0	
cm3/1000 strokes Check tolerance		3.0	Ŧ	Rated speed rpm	:	275	
cm3/1000s.	:	٠.٠	т	varen sheen chii	•	ر ۱ے	

Del. quantity

cm3/1000 strokes : 75.0

Tolerance

cm3/1000 strokes : 25.0

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm 7,5

Dimension KF mm : KOT MS1 dimension mm : 1,72

Tolerance mm : +0,15/-0,1

# CONTROL LEVER POSITION

SET

Control lever

: 37,2..39,2 position YA mm

Control lever

position YB mm : 55,1..62,9

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.07.95 Test oil : ISO 4113

Part no. : 0 460 485 032 Pump designation : VE5/8F2100L545-6

Customer-spec. information
Customer : VW
Motor : 2,41 SD
Power KW : 57.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

# REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.4
Tolerance mm : 0.2
Shutoff solenoid

Volt : 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.0 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity
cm3/1000 strokes : 36.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 540
Del. quantity
cm3/1000 strokes : 7.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

#### STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : 25.0

Shutoff solenoid Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
	Rated speed rpm : 1790
LOAD-DEPENDENT START OF DELIVERY	Supply pomp pressure bar : 7.5
SETTING	Tolerance hPa : 0.3
DELIVERY DIFFERENCE	Shutoff solenoid Volt : 12
Rated speed rpm : 1500 Del. quantity	Rated speed rpm : 1000 Supply pomp
cm3/1000 strokes : -7.0	pressure bar : 5.3
Tolerance cm3/1000 strokes : 1.0	Tolerance hPa : 0.3
cm3/1000 strokes : 1.0 Shutoff solenoid	+ Shutoff solenoid + Volt : 12
Volt : 12	+
DDECKIDE ATTERDENCE	OVERFLOW QUANTITY
PRESSURE DIFFERENCE	Rated speed rpm : 2100
Rated speed rpm : 1500	+ Overflow quantity
Del. quantity cm3/1000 strokes : -0.2	t ccm/10s : 97.2 Tolerance
Tolerance	+ ccm/10s : 41.6
cm3/1000 strokes : 0.1	+
Shutoff solenoid Volt : 12	+ Check tolerance + ccm/10s : 55.5
. 12	Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	+ Volt : 12
Rated speed rpm : 1500 Del. quantity	+ Rated speed rpm : 600 + Overflow quantity
cm3/1000 strokes : -0.4	+ ccm/10s : 63.8
Tolerance cm3/1000 strokes : 0.1	+ Tolerance + ccm/10s : 22.2
Shutoff solenoid	+
Volt : 12	Check tolerance
	+ ccm/10s : 34.7 + Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	Volt : 12
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1790	Rated speed rpm : 2400
SV travel mm : 5.7	+ Del. quantity + cm3/1000 strokes : 12.0
Tolerance mm : 0.4	† Tolerance
Check tolerance mm : 0.7	+ cm3/1000 strokes : 2.0
tolerance mm : 0.7 Shutoff solenoid	+ Check tolerance + cm3/1000s. : 4.0
Volt : 12	- Shutoff solenoid
Rated speed rpm : 1000	† Volt : 12
Rated speed rpm : 1000	Rated speed rpm : 2300
SV travel mm : 0.7	🕂 Del. quantity
Tolerance mm : 0.4 Check	+ cm3/1000 strokes : 22.0 + Tolerance
tolerance mm : 0.7	+ cm3/1000 strokes : 5.0
Shutoff solenoid	Check tolerance
Volt : 12	+ cm3/1000s. : 6.0

G11

Shutoff solenoid			+ Rated speed	d rpm	:	415
Volt	:	12	+ Del. quanti			
			+ cm3/1000 st	trokes	:	1.5
Rated speed rpm	;	2600	+ Tolerance			
Del. quantity			+ cm3/1000 st	trokes	:	1.5
cm3/1000 strokes	:	3.0	+ Spread			
Tolerance			+ cm3/1000 st		:	5.0
cm3/1000 strokes	:	3.0	+ Check toler			
Check tolerance			+ cm3/1000s.		:	1.5
cm3/1000s.	:	3.0	+ Spread			
Shutoff solenoid		40	+ cm3/1000 st	trokes	:	5.0
Volt	:	12	†			
Dada da ana ada ana		2400	†			
Rated speed rpm	:	2100	†			
Del. quantity	_	71 0	DECTALLS OF	IANITTTV		
cm3/1000 strokes	:	31.0	+ RESIDUAL QU	JANILII		
Tolerance		1.0	T Dated areas	d		/.OO
cm3/1000 strokes Check tolerance	:	1.0	+ Rated speed + Del. quanti		•	490
cm3/1000s.	•	2.2	+ cm3/1000 st			7.8
Shutoff solenoid	•	۷.۵	Tolerance	LIUNES	•	7.0
Volt	•	12	- cm3/1000 st	trokes		1.0
1010	•	16	Check toler		•	,
Rated speed rpm	:	600	+ cm3/1000s.		:	2.5
Del. quantity	•	300	Shutoff sol		•	<b>-</b> •->
cm3/1000 strokes	:	33.8	+ Volt	conora	•	12
Tolerance	•	33.3	+		•	
cm3/1000 strokes	:	1.5	1			
Check tolerance	•		<u> </u>			
cm3/1000s.	:	3.0	+ CHECKING LO	DAD-DEPE	END	ENT
Shutoff solenoid			+ START OF DE			
Volt	:	12	+			
			+ DELIVERY DI	FFEREN	CE	
Rated speed rpm	:	1250	+			
Del. quantity			+ Rated speed		:	1500
cm3/1000 strokes	:	36. <i>5</i>	🕂 Del. quanti			
Tolerance			+ cm3/1000 st	rokes	:	<del>-</del> 6.5
cm3/1000 strokes	:	0.5	† Tolerance			
Check tolerance		<u>.</u> .	+ cm3/1000 st		:	3.0
cm3/1000s.	:	2.2	+ Check toler	rance		
Shutoff solenoid		4.5	+ cm3/1000s.		:	4.0
Volt	:	12	+ Shutoff sol	.enoid		40
			† Volt		:	12
			† TIMTNO 05117	CE TO 41	<i>11</i>	NICECOCNOC
ELECTO CHUTAFF			TIMING-DEVI	LE IKAL	/tL	DILLEKENCE
ELECTR. SHUTOFF	i e s	STOR	Rated speed	l rnm		1500
CONTROL LEVER, ID	בכ 3	31UF	+ Rated speed + Del. quanti		:	1,000
Dated cheed nom		415	+ cm3/1000 st			-0.4
Rated speed rpm Del. quantity	:	417	+ Tolerance	.1 UKES	•	0.4
cm3/1000 strokes		1.5	+ cm3/1000 st	rokes		0.1
Tolerance	•	1.0	+ Check toler		•	0.1
cm3/1000 strokes	•	1.5	- cm3/1000s.		•	0.1
Check tolerance	•	1.5	Shutoff sol		•	<b>U.</b> 1
cm3/1000s.	•	1.5	- Volt		:	12
Spread	•		1		•	
cm3/1000 strokes	•	5.0	DELIVERY DI	FFFRENC	F	
Silvi FOOD SCI ONES	•	٥.٠	1	., , _,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	_	
FULL-LOAD STOP CO	NTRO	L LEVER	Rated speed	rpm	:	1500
TOLL LUMB BIDE COL	41110		, hatea speed		•	

Del. quantity

cm3/1000 strokes : 1.5

Tolerance

1.5 cm3/1000 strokes :

Check tolerance

1.5 cm3/1000s.

Shutoff solenoid

12 Volt

PRESSURE DIFFERENCE

Rated speed rpm 1500

Supply pomp

pressure bar -1.0Tolerance hPa 0.2 :

Shutoff solenoid

12 Volt

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500

0.2 Tolerance mm

Check

tolerance mm 0.6 :

Shutoff solenoid

12 Volt

START TRANSITION

380 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 27.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

12 Volt

Rated speed rpm 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 : +-0,1 Tolerance mm

: 5,8 Dimension KF mm

: +-0,2 Tolerance mm

: 1,4 Dimension MS mm

: +-0,2 Tolerance mm

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 32,8..34,8

Control lever

: 60,5..71,5 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.09.95 : ISO 4113 Test oil

Part no. : 0 460 485 034 Pump designation: VE5/8F2100L545-7

Customer-spec. information

Customer : VW

Motor : 2,41 SD Power KW 57.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

147 Tolerance bar 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Settina mm 2.4 Tolerance mm 0.2

Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 1250 :

Setting hPa 6.0 : Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 36.5

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm Del. quantity

cm3/1000 strokes : 7.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

12 Volt

FULL-LOAD SPEED REGULATION

Rated speed rpm 2400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid Volt	:	12	SUPPLY PUMP PRESSURE CHARACTERISTIC
			Rated speed rpm : 1790 Supply pomp
LOAD-DEPENDENT ST	APT	OF DELIVERY	pressure bar : 7.5
SETTING	AI\ 1	OI DELIVERI	Tolerance hPa : 0.3
SELLTING			
			+ Shutoff solenoid
DELIVERY DIFFEREN	ICE		+ Volt : 12
			+
Rated speed rpm	:	1500	+ Rated speed rpm : 1000
Del. quantity			+ Supply pomp
cm3/1000 strokes	:	-7.0	pressure bar : 5.3
Tolerance	•	1.0	Tolerance hPa : 0.3
		1.0	
cm3/1000 strokes	:	1.0	+ Shutoff solenoid
Shutoff solenoid			+ Volt : 12
Volt	:	12	+
			+ OVERFLOW QUANTITY
PRESSURE DIFFEREN	ICE		1
			Rated speed rpm : 2100
Dated aread nom		1500	Overflow quantity
Rated speed rpm	:	1000	
Del. quantity			+ ccm/10s : 97.2
cm3/1000 strokes	:	-0.2	+ Tolerance
Tolerance			+ ccm/10s : 41.6
cm3/1000 strokes	:	0.1	+
Shutoff solenoid			+ Check tolerance
Volt	•	12	+ ccm/10s : 55.5
VOCE	•		Shutoff solenoid
TINING DELIZEE TO	1	NICEPOPNOE	
TIMING-DEVICE TRA	VEL	DIFFERENCE	+ Volt : 12
			†
Rated speed rpm	:	1500	+ Rated speed rpm : 600
Del. quantity			Overflow quantity
cm3/1000 strokes	:	-0.4	+ ccm/10s : 63.8
Tolerance			† Tolerance
cm3/1000 strokes		0.1	+ ccm/10s : 22.2
Shutoff solenoid	•	0.1	
		12	T Charle to Language
1/6/ +			→         Check tolerance
Volt	:	, ,	) (40-
Volt	:	,,	+ ccm/10s : 34.7
	:		Shutoff solenoid
INJECTION-PUMP TE	st s		
	ST S		Shutoff solenoid Volt : 12
		SPECIFICATIONS	Shutoff solenoid
INJECTION-PUMP TE		SPECIFICATIONS	Shutoff solenoid Volt : 12
INJECTION-PUMP TE		SPECIFICATIONS TERISTIC	Shutoff solenoid Volt : 12 DELIVERY AND BREAKAWAY CHARACTERISTIC
INJECTION-PUMP TE		SPECIFICATIONS	Shutoff solenoid Volt : 12 DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2400
INJECTION-PUMP TE TIMING DEVICE CHA		SPECIFICATIONS TERISTIC 1790	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm SV travel mm		SPECIFICATIONS TERISTIC 1790 5.7	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm		SPECIFICATIONS TERISTIC 1790	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm  SV travel mm Tolerance mm Check		SPECIFICATIONS TERISTIC 1790 5.7 0.4	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm		SPECIFICATIONS TERISTIC 1790 5.7	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid		SPECIFICATIONS TERISTIC 1790 5.7 0.4 0.7	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm		SPECIFICATIONS TERISTIC 1790 5.7 0.4	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	RAC	SPECIFICATIONS TERISTIC 1790 5.7 0.4 0.7	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	RAC	SPECIFICATIONS TERISTIC 1790 5.7 0.4 0.7	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	RAC	SPECIFICATIONS TERISTIC 1790 5.7 0.4 0.7 12	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm	RAC	SPECIFICATIONS TERISTIC 1790 5.7 0.4 0.7 12 1000	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm	RAC	SPECIFICATIONS TERISTIC 1790 5.7 0.4 0.7 12 1000 0.7	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm	RAC	SPECIFICATIONS TERISTIC 1790 5.7 0.4 0.7 12 1000	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 22.0
INJECTION—PUMP TE TIMING DEVICE CHA Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check	RAC	5.7 0.4 0.7 12 1000 0.7 0.4	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 22.0 Tolerance
INJECTION—PUMP TE TIMING DEVICE CHA Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm	RAC	SPECIFICATIONS TERISTIC 1790 5.7 0.4 0.7 12 1000 0.7	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 strokes : 5.0
INJECTION-PUMP TE TIMING DEVICE CHA Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	RAC	SPECIFICATIONS TERISTIC 1790 5.7 0.4 0.7 12 1000 0.7 0.4 0.7	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000s. : 2.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 strokes : 5.0 Check tolerance
INJECTION—PUMP TE TIMING DEVICE CHA Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm	RAC	5.7 0.4 0.7 12 1000 0.7 0.4	Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 strokes : 5.0

Shutoff solenoid volt				
Del. quantity	Shutoff solenoid			+ Rated speed rpm : 415
Rated speed rpm : 2600  Del. quantity cm3/1000 strokes : 3.0  Tolerance cm3/1000 strokes : 3.0  Check tolerance cm3/1000 strokes : 3.0  Check tolerance cm3/1000 strokes : 3.0  Shutoff solenoid  Volt  Rated speed rpm : 2100  Del. quantity cm3/1000 strokes : 31.0  Tolerance cm3/1000 strokes : 31.0  Rated speed rpm : 2100  Del. quantity cm3/1000 strokes : 31.0  Tolerance cm3/1000 strokes : 31.0  Rated speed rpm : 490  Del. quantity cm3/1000 strokes : 1.0  Check tolerance cm3/1000 strokes : 1.0  Rated speed rpm : 490  Del. quantity cm3/1000 strokes : 7.8  Shutoff solenoid  Volt  Rated speed rpm : 490  Del. quantity cm3/1000 strokes : 33.8  Tolerance cm3/1000 strokes : 33.8  Tolerance cm3/1000 strokes : 33.8  Tolerance cm3/1000 strokes : 1.5  Check tolerance cm3/1000 strokes : 3.0  Shutoff solenoid  Volt  Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 36.5  Tolerance cm3/1000 strokes : 36.5  Del. quantity cm3/1000 strokes : 36.5  Tolerance cm3/1000 strokes : 36.5  Tolerance cm3/1000 strokes : 3.0  Shutoff solenoid  Volt  I 2  ELECTR. SHUTOFF  CONTROL LEVER, IDLE STOP  Rated speed rpm : 415  Del. quantity cm3/1000 strokes : 1.5  Check tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 1.5  Tolerance cm3/1000 strokes : 0.5  Check tolerance cm3/1000 strokes : 3.0  Check tolerance cm3/1000 strokes : -6.5  Tolerance cm3/1000 strokes : -6.5  Tolerance cm3/1000 strokes : -6.5  Tolerance cm3/1000 strokes : -0.4  Tolerance cm3/1000 strokes : -0.4  Tolerance cm3/1000 strokes : 0.1  TimIng-Device Travel Difference cm3/1000 strokes : 0.1  Timing-Device Travel Difference cm3/1000 strokes : 0.1  Tolerance cm3/1000 strokes : 0.1  Tolerance cm3/1000 strokes : 0.1  Tolerance cm3/1000 strokes : 0.1  Tolerance cm3/1000 strokes : 0.1  Tolerance cm3/1000 strokes : 0.1  Timing-Device Travel Difference cm3/1000 strokes : 0.1  Timing-Device Travel Difference cm3/1000 strokes : 0.1  Tolerance cm3/1000 strokes : 0.1  Tolerance cm3/1000 strokes : 0.1  Tolerance cm3/1000 strokes : 0.1  Tolerance cm3/1000 strokes : 0.1  Ti		•	12	
Rated speed rpm : 2600  Del. quantity cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2100 Del. quantity cm3/1000 strokes : 31.0 Rated speed rpm : 2100 Del. quantity Cm3/1000 strokes : 31.0 Rated speed rpm : 2100 Del. quantity Cm3/1000 strokes : 1.0 Check tolerance cm3/1000 strokes : 1.0 Check tolerance Cm3/1000 strokes : 1.0 Check tolerance Cm3/1000 strokes : 1.0 Check tolerance Cm3/1000 strokes : 1.0 Check tolerance Cm3/1000 strokes : 1.0 Check tolerance Cm3/1000 strokes : 1.0 Check tolerance Cm3/1000 strokes : 1.0 Check tolerance Cm3/1000 strokes : 33.8 Tolerance Cm3/1000 strokes : 1.5 Check tolerance Cm3/1000 strokes : 1.5 Check tolerance Cm3/1000 strokes : 1.5 Check tolerance Cm3/1000 strokes : 3.0 CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity Cm3/1000 strokes : 36.5 Tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 3.0 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 strokes : 0.1 Check tolerance Cm3/1000 stro	1011	•	,,_	
Del. quantity cm3/1000 strokes : 3.0 cm3/1000 strokes : 3.0 cm3/1000 strokes : 3.0 cm3/1000 strokes : 3.0 cm3/1000 strokes : 3.0 cm3/1000s. : 3.0 cm3/1000s. : 1.5 cm3/1000s. : 1.5 cm3/1000s. : 1.5 cm3/1000s. : 1.5 cm3/1000s. : 1.5 cm3/1000s. : 1.5 cm3/1000s. : 1.5 cm3/1000s. : 1.5 cm3/1000s. : 1.5 cm3/1000 strokes : 5.0 cm3/1000 strokes : 5.0 cm3/1000 strokes : 5.0 cm3/1000 strokes : 31.0 cm3/1000 strokes : 31.0 cm3/1000 strokes : 1.0 cm3/1000 strokes : 1.0 cm3/1000 strokes : 1.0 cm3/1000 strokes : 7.8 cm3/1000 strokes : 1.2 cm3/1000 strokes : 1.2 cm3/1000 strokes : 1.2 cm3/1000 strokes : 1.0 cm3/1000 strokes : 1.0 cm3/1000 strokes : 33.8 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 1.5 cm3/1000 strokes : 3.0 cm3/1000 strokes :	Pated speed spm		2400	
cm3/1000 strokes         3.0           Tolerance         cm3/1000 strokes         5.0           Check tolerance         cm3/1000s         1.5           cm3/1000s         3.0         Check tolerance           cm3/1000s         3.0         Check tolerance           cm3/1000 strokes         3.0         Cm3/1000 strokes         5.0           Rated speed rpm         2100         20           Del. quantity         Cm3/1000 strokes         31.0         RESIDUAL QUANTITY           Tolerance         cm3/1000 strokes         1.0         Rated speed rpm         490           Check tolerance         cm3/1000 strokes         7.8         Tolerance         7.8           Check tolerance         cm3/1000 strokes         1.0         Check tolerance         cm3/1000s         1.0         Check tolerance           cm3/1000 strokes         33.8         Tolerance         Tolerance         Cm3/1000s         2.5         Del. quantity         CHECKING LOAD-DEPENDENT         START OF DELIVERY         Del. quantity         START OF DELIVERY         Del. quantity         CHECKING LOAD-DEPENDENT         START OF DELIVERY         Del. quantity         CHECKING LOAD-DEPENDENT         START OF DELIVERY         Del. quantity         Check tolerance         cm3/1000 strokes         -6.5		•	2000	
Tolerance cm3/1000 strokes : 3.0				
cm3/1000 strokes :         3.0         Check tolerance cm3/1000S.         :         1.5           check tolerance cm3/1000S.         :         3.0         Spread cm3/1000 strokes :         5.0           Shutoff solenoid volt         :         12         Resibual Quantity           cm3/1000 strokes :         31.0         RESIDUAL QUANTITY           Tolerance cm3/1000 strokes :         31.0         Resibual Quantity           cm3/1000 strokes :         31.0         Rated speed rpm :         490           Check tolerance cm3/1000 strokes :         2.2         cm3/1000 strokes :         7.8           Shutoff solenoid volt :         12         cm3/1000 strokes :         1.0           Rated speed rpm :         600         cm3/1000 strokes :         1.0           Check tolerance cm3/1000 strokes :         33.8         volt :         12           Tolerance cm3/1000 strokes :         1.5         Check tolerance cm3/1000 strokes :         1.5           Check tolerance cm3/1000 strokes :         36.5         Del. quantity         Del. quantity           Cm3/1000 strokes :         36.5         Del. quantity         Cm3/1000 strokes :         3.0           Check tolerance cm3/1000 strokes :         0.5         Tolerance cm3/1000 strokes :         3.0           Chec	cm3/1000 strokes	:	3.0	
Check tolerance cm3/1000S. : 3.0 Spread cm3/1000S. : 1.5 Spread cm3/100OS. : 3.0 Spread cm3/100OS. : 1.5 Spread cm3/100OS. : 1.5 Spread cm3/100O strokes : 5.0 Cm3/100O strokes : 5.0 Cm3/100O strokes : 5.0 Cm3/100O strokes : 31.0 Cm3/100O strokes : 31.0 Cm3/100O strokes : 31.0 Cm3/100O strokes : 1.0 Cm3/100OS. : 2.2 Cm3/100OS strokes : 7.8 Cm3/100OS. : 2.2 Cm3/100O strokes : 1.0 Cm3/10OO strokes : 1.0 Cm3/10OO strokes : 1.0 Cm3/10OO strokes : 1.0 Cm3/10OO strokes : 33.8 Cm3/10OO strokes : 33.8 Cm3/10OO strokes : 33.8 Cm3/10OO strokes : 33.0 Cm3/10OO strokes : 3.0 Cm3/10OO strokes : 3.0 Cm3/10OO strokes : 3.0 Cm3/10OO strokes : 36.5 Cm3/10OO strokes : 36.5 Cm3/10OO strokes : 36.5 Cm3/10OO strokes : 36.5 Cm3/10OO strokes : 36.5 Cm3/10OO strokes : 36.5 Cm3/10OO strokes : 3.0	Tolerance			+ cm3/1000 strokes : 5.0
cm3/1000S.         : 3.0         Spread         cm3/1000 strokes : 5.0           Shutoff solenoid Volt         : 12         m3/1000 strokes : 5.0         5.0           Rated speed rpm : 2100 bel. quantity cm3/1000 strokes : 31.0         RESIDUAL QUANTITY         Reside speed rpm : 490         Check tolerance cm3/1000 strokes : 7.8         Check tolerance cm3/1000 strokes : 7.8         Tolerance cm3/1000 strokes : 7.8         Tolerance cm3/1000 strokes : 1.0         Check tolerance cm3/1000 strokes : 1.0         Check tolerance cm3/1000 strokes : 1.0         Check tolerance cm3/1000s : 2.5         Sbutoff solenoid Volt : 12         Volt : 12         Tolerance cm3/1000s : 2.5         Sbutoff solenoid Volt : 12         Tolerance cm3/1000s : 2.5         Sbutoff solenoid Volt : 12         Tolerance cm3/1000 strokes : 1.5         Tolerance cm3/1000 strokes : 2.5         Tolerance cm3/1000 strokes : 3.0         CHECKING LOAD-DEPENDENT START OF DELIVERY         Tolerance cm3/1000 strokes : -6.5         Tolerance cm3/1000 strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : -0.4         Tolerance cm3/1000 strokes : -0.4         Toleran	cm3/1000 strokes	:	3.0	+ Check tolerance
cm3/1000S.         : 3.0         Spread         cm3/1000 strokes : 5.0           Shutoff solenoid Volt         : 12         m3/1000 strokes : 5.0         5.0           Rated speed rpm : 2100 bel. quantity cm3/1000 strokes : 31.0         RESIDUAL QUANTITY         Reside speed rpm : 490         Check tolerance cm3/1000 strokes : 7.8         Check tolerance cm3/1000 strokes : 7.8         Tolerance cm3/1000 strokes : 7.8         Tolerance cm3/1000 strokes : 1.0         Check tolerance cm3/1000 strokes : 1.0         Check tolerance cm3/1000 strokes : 1.0         Check tolerance cm3/1000s : 2.5         Sbutoff solenoid Volt : 12         Volt : 12         Tolerance cm3/1000s : 2.5         Sbutoff solenoid Volt : 12         Tolerance cm3/1000s : 2.5         Sbutoff solenoid Volt : 12         Tolerance cm3/1000 strokes : 1.5         Tolerance cm3/1000 strokes : 2.5         Tolerance cm3/1000 strokes : 3.0         CHECKING LOAD-DEPENDENT START OF DELIVERY         Tolerance cm3/1000 strokes : -6.5         Tolerance cm3/1000 strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : 3.0         Check tolerance cm3/1000s strokes : -0.4         Tolerance cm3/1000 strokes : -0.4         Toleran	Check tolerance			$\frac{1}{2}$ cm3/1000s. : 1.5
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cm3/1000 strokes : 31.0       RESIDUAL QUANTITY         Tolerance cm3/1000 strokes : 1.0       Rated speed rpm : 490         cm3/1000 strokes : 1.0       Pel. quantity         cm3/1000 strokes : 7.8       Tolerance         cm3/1000 strokes : 1.0       Check tolerance         cm3/1000 strokes : 33.8       Tolerance         cm3/1000 strokes : 33.8       Volt : 12         Check tolerance cm3/1000 strokes : 1.5       Shutoff solenoid         Volt : 12       DELIVERY DIFFERENCE         Rated speed rpm : 1250       Rated speed rpm : 1500         Pel. quantity       Rated speed rpm : 1500         cm3/1000 strokes : 36.5       Del. quantity         cm3/1000 strokes : 36.5       Rated speed rpm : 1500         Del. quantity       Rated speed rpm : 1500         cm3/1000 strokes : 3.0       Check tolerance         cm3/1000 strokes : 3.0       Tolerance         Check tolerance       Cm3/1000 strokes : 3.0         Check tolerance       Cm3/1000 strokes : -0.4         Tolerance       Cm3/1000 strokes : -0.4         Tolerance       Cm3/1000 strokes : -0.4 <t< td=""><td></td><td>:</td><td>2100</td><td>†</td></t<>		:	2100	†
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cm3/1000 strokes :       1.0         Check tolerance cm3/1000s.       : 2.2         cm3/1000s.       : 2.2         Shutoff solenoid Volt :       12         Volt :       12         Rated speed rpm :       600         Del. quantity cm3/1000 strokes :       33.8         cm3/1000 strokes :       33.8         Tolerance cm3/1000 strokes :       1.5         Check tolerance cm3/1000s.       : 3.0         Check tolerance cm3/1000s.       : 3.0         Cm3/1000 strokes :       36.5         Shutoff solenoid Volt :       12         Rated speed rpm :       1500         Del. quantity cm3/1000 strokes :       36.5         Tolerance cm3/1000 strokes :       36.5         Check tolerance cm3/1000 strokes :       0.5         Cm3/1000 strokes :       3.0         Check tolerance cm3/1000s.       : 2.2         Check tolerance cm3/1000s.       : 3.0         Check tolerance cm3/1000s strokes :       -0.4 <td>cm3/1000 strokes</td> <td>:</td> <td>31.0</td> <td>+ RESIDUAL QUANTITY</td>	cm3/1000 strokes	:	31.0	+ RESIDUAL QUANTITY
Del. quantity	Tolerance			+
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cm3/1000S.       : 2.2       cm3/1000 strokes : 7.8         Shutoff solenoid Volt       : 12       cm3/1000 strokes : 1.0         Rated speed rpm : 600       cm3/1000 strokes : 1.0       cm3/1000S.       : 2.5         Del. quantity       shutoff solenoid       volt : 12         Check tolerance       cm3/1000 strokes : 1.5       cm3/1000 strokes : 1.5         Check tolerance       cm3/1000S.       : 3.0       CHECKING LOAD-DEPENDENT         Shutoff solenoid Volt       : 12       DELIVERY DIFFERENCE         Rated speed rpm : 1250         Del. quantity       cm3/1000 strokes : -6.5         Tolerance       cm3/1000 strokes : -6.5         Check tolerance       cm3/1000 strokes : 3.0         Check tolerance       cm3/1000S.       : 2.2         Check tolerance       cm3/1000S.       : 4.0         Chyloff solenoid       volt       : 12         TIMING-DEVICE TRAVEL DIFFERENCE         ELECTR. SHUTOFF         CONTROL LEVER, IDLE STOP       Rated speed rpm : 1500         Del. quantity       cm3/1000 strokes : -0.4         Tolerance       cm3/1000 strokes : 0.1         Check tolerance       cm3/1000 strokes : 0.1         Check tolerance       cm3/1000 strokes : 0.1		•	. , -	
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Rated speed rpm : 600  Del. quantity cm3/1000 strokes : 33.8 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 3.0  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 36.5 Del. quantity cm3/1000 strokes : 0.5 Check tolerance cm3/1000 strokes : 0.5 Check tolerance cm3/1000 strokes : 0.5 Check tolerance cm3/1000 strokes : 12  Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 0.1 Check to			40	
Rated speed rpm : 600  Del. quantity cm3/1000 strokes : 33.8 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 3.0  Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 36.5 Tolerance cm3/1000 strokes : 36.5 Tolerance cm3/1000 strokes : 0.5 Check tolerance cm3/1000 strokes : 0.5 Check tolerance cm3/1000 strokes : 0.5 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Cm3/1000 strokes : 0.1 Check tolerance cm3/1000 strokes : 0.5 Check tolerance cm3/1000 strokes : 0.5 Check tolerance cm3/1000 strokes : 0.5 Check tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000 strokes : 0.5 Check tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000 strokes : 0.5 Check	VOLL	:	12	
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cm3/1000 strokes : 1.5       1.5         Check tolerance cm3/1000s. : 3.0       CHECKING LOAD-DEPENDENT         Shutoff solenoid Volt : 12       DELIVERY DIFFERENCE         Rated speed rpm : 1250       Rated speed rpm : 1500         Del. quantity cm3/1000 strokes : 36.5       Del. quantity cm3/1000 strokes : -6.5         Tolerance cm3/1000 strokes : 0.5       Tolerance cm3/1000 strokes : 3.0         Check tolerance cm3/1000s. : 2.2       Check tolerance cm3/1000s. : 4.0         Shutoff solenoid Volt : 12       Shutoff solenoid Volt : 12         ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP       Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.4         Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5       Cm3/1000 strokes : 0.1         Tolerance cm3/1000 strokes : 1.5       Cm3/1000 strokes : 0.1         Check tolerance cm3/1000s strokes : 1.5       Check tolerance cm3/1000s. : 0.1         Check tolerance cm3/1000s. : 1.5       Shutoff solenoid Volt : 12         Spread cm3/1000 strokes : 5.0       DELIVERY DIFFERENCE	cm3/1000 strokes	:	33.8	+         Volt         :         12
cm3/1000 strokes : 1.5       1.5         Check tolerance cm3/1000s. : 3.0       CHECKING LOAD-DEPENDENT         Shutoff solenoid Volt : 12       DELIVERY DIFFERENCE         Rated speed rpm : 1250       Rated speed rpm : 1500         Del. quantity cm3/1000 strokes : 36.5       Del. quantity cm3/1000 strokes : -6.5         Tolerance cm3/1000 strokes : 0.5       Tolerance cm3/1000 strokes : 3.0         Check tolerance cm3/1000s. : 2.2       Check tolerance cm3/1000s. : 4.0         Shutoff solenoid Volt : 12       Shutoff solenoid Volt : 12         ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP       Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.4         Rated speed rpm : 415 Del. quantity cm3/1000 strokes : 1.5       Cm3/1000 strokes : 0.1         Tolerance cm3/1000 strokes : 1.5       Cm3/1000 strokes : 0.1         Check tolerance cm3/1000s strokes : 1.5       Check tolerance cm3/1000s. : 0.1         Check tolerance cm3/1000s. : 1.5       Shutoff solenoid Volt : 12         Spread cm3/1000 strokes : 5.0       DELIVERY DIFFERENCE	Tolerance			<del>}</del>
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CONTROL LEVER, IDLE STOP  Rated speed rpm : 415  Del. quantity  cm3/1000 strokes : -0.4  Tolerance  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 strokes : 1.5  Check tolerance  cm3/1000s. : 1.5  Spread  cm3/1000 strokes : 5.0  DELIVERY DIFFERENCE	ELECTR. SHUTOFF			+
Rated speed rpm : 415		LE S	TOP	+ Rated speed rpm : 1500
Rated speed rpm : 415  Del. quantity  cm3/1000 strokes : -0.4  Tolerance  cm3/1000 strokes : 0.1  Tolerance  cm3/1000 strokes : 1.5  Check tolerance  cm3/1000s. : 1.5  Spread  cm3/1000 strokes : 5.0  DELIVERY DIFFERENCE	TOTAL CATCAL TO			· · · · · · · · · · · · · · · · · · ·
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5 Spread cm3/1000 strokes : 5.0  Tolerance cm3/1000s. : 0.1 Check tolerance cm3/1000s. : 1.5  DELIVERY DIFFERENCE	Poted speed nom		415	
cm3/1000 strokes :       1.5         Tolerance cm3/1000 strokes :       1.5         cm3/1000s :       1.5         Check tolerance cm3/1000s.       :         cm3/1000s.       :         1.5       -         Shutoff solenoid volt :       12         Spread cm3/1000 strokes :       5.0         DELIVERY DIFFERENCE		•	417	
Tolerance cm3/1000 strokes: 1.5 Check tolerance cm3/1000s. : 0.1 Spread cm3/1000 strokes: 5.0  Check tolerance cm3/1000s. : 0.1 Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE			4 -	
cm3/1000 strokes :       1.5         Check tolerance cm3/1000s.       : 0.1         cm3/1000s.       : 1.5         Spread cm3/1000 strokes :       5.0         DELIVERY DIFFERENCE		:	7.5	
Check tolerance			<u> </u>	
cm3/1000s. : 1.5 + Volt : 12 Spread cm3/1000 strokes : 5.0 + DELIVERY DIFFERENCE		:	1.5	
Spread + DELIVERY DIFFERENCE + DELIVERY DIFFERENCE	Check tolerance			
Spread + DELIVERY DIFFERENCE + DELIVERY DIFFERENCE		:	1.5	+         Volt         :         12
cm3/1000 strokes : 5.0 + DELIVERY DIFFERENCE			_	+
+	cm3/1000 strokes	•	5.0	DELIVERY DIFFERENCE
FULL-LOAD STOP CONTROL LEVER	01127 1000 3 CT UNCS	•	٠.٠	APPROPRIATION AND AND AND AND AND AND AND AND AND AN
FULL-LUAU STOP CONTROL LEVER T Kated Speed rpm : 1500	FULL LOAD CTOD CO	JTDA	LEVEN	T Poted around nam . 1500
l l	FULL-LUAD STOP CON	MIKO	L LEVEK	+ kated speed rpm : 1500
<b>†</b>				†

Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5

Shutoff solenoid

Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500
Supply pomp
pressure bar : -1.0
Tolerance hPa : 0.2

Shutoff solenoid

Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500 Tolerance mm : 0.2 Check

tolerance mm

mm : 0.6

Shutoff solenoid

Volt : 12

START TRANSITION

Rated speed rpm : 380 Del. quantity

cm3/1000 strokes : 27.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,8
Tolerance mm : +-0,2

Dimension MS mm : 1,4

Tolerance mm : +-0,2

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.02.96 Edition : ISO 4113 Test oil

: 0 460 404 078 Part no. Pump designation: VE4/10F2100L553

Customer-spec. information

Customer : VM

: 425 CLIRZ/CLIRX Motor

TEST BENCH REQUIREMENTS

Overflow

0.75 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar 3

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 500

Aneroid pressure

1000 hPa

7.7 Setting mm Tolerance mm 0.2 Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

500 Rated speed rpm

Aneroid pressure

1000 hPa

5.9 Setting hPa Tolerance hPa 0.3

Shutoff solenoid

Volt 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1500 Aneroid pressure

hPa 1000 Del. quantity

cm3/1000 strokes : 68.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.0

Check tolerance cm3/1000s.

3.0

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

700 Rated speed rpm

Del. quantity

cm3/1000 strokes : 44.5

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s.3.0

IDLE SETTING

450 Rated speed rpm

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.3.0

FULL-LOAD SPEED F	REGULATION	+ Shutoff solenoid + Volt	ł :	12	
Rated speed rpm Pressure hPa	: 2300 : 1000	Timing device	·		
Del. quantity cm3/1000 strokes	: 49.0	solenoid Volt	:	100	
Tolerance cm3/1000 strokes	: 3.0	Rated speed rpm Aneroid pressure		1000	
Shutoff solenoid Valt	: 12	+ hPa +	:	1000	
STARTING FUEL DEL	TVERY	+ SV travel mm + Tolerance mm	:	9.0 0.5	
		+ Check	•		
Rated speed rpm Del. quantity	: 100	+ tolerance mm + Shutoff solenoid	:	0.7	
cm3/1000 strokes Tolerance	: 65.0	Volt	:	12	
cm3/1000 strokes Shutoff solenoid	: 17.0	Rated speed rpm Aneroid pressure		1000	
Volt	: 12	+ hPa	:	1000	
		SV travel mm	:	0.3	
		+ Tolerance mm + Check	:	0.3	
TALLECTION DUMP TO	OT ODECLETOAT	tolerance mm	:	0.3	
INJECTION-PUMP TE	ST SPECIFICAT	IONS + Shutoff solenoid + Volt	:	12	
TIMING DEVICE CHA	RACTERISTIC	+ + Timing device			
Rated speed rpm Aneroid pressure	: 2100	solenoid Volt	:	100	
hPa	: 1000	SUPPLY PUMP PRES	SURE	CHARACTERISTI	<b>C</b>
SV travel mm	: 9.8	Rated speed rpm		2100	
Tolerance mm Check	: 0.5	+ Aneroid pressure + hPa	:	1000	
tolerance mm Shutoff solenoid	: 0.7	Supply pomp pressure bar		8.0	
Volt	: 12	+ Tolerance hPa	:	0.3	
Rated speed rpm	: 150	+ Shutoff solenoid + Volt	:	12	
Aneroid pressure hPa	: 1000	Rated speed rpm	:	150	
SV travel mm	: 5.5	+ Aneroid pressure + hPa	:	1000	
Tolerance mm Check	: 1.8	+ Supply pomp + pressure bar	:	4.8	
tolerance mm Shutoff solenoid	: 1.8	Tolerance hPa Shutoff solenoid	:	0.8	
Volt	: 12	Volt	:	12	
Rated speed rpm	: 2100	Rated speed rpm	:	1000	
Aneroid pressure hPa	: 1000	+ Aneroid pressure + hPa + Supply pomp	:	1000	
SV travel mm	: 0.5	+ pressure bar	:	6.5	
Tolerance mm Check	: 0.5	† Tolerance hPa † Shutoff solenoid	:	0.3	
tolerance mm	: 0.5	/ Yolt	:	12	

		Charle to Language
OVERFLOW QUANTITY	1	+ Check tolerance + cm3/1000s. : 2.5 + Shutoff solenoid
Rated speed rpm Aneroid pressure	: 2100	Volt : 12
hPa Overflow quantity	: 1000	Rated speed rpm : 2100 Aneroid pressure
ccm/10s Tolerance	: 111.1	hPa : 1000
ccm/10s	: 55.5	cm3/1000 strokes : 63.5 Tolerance
Check tolerance ccm/10s	: 55.5	cm3/1000 strokes : 1.5 Check tolerance
Shutoff solenoid Volt	: 12	cm3/1000s. : 3.0 Shutoff solenoid
DELIVERY AND BREA	KAWAY CHARACTERISTI	
Rated speed rpm	: 2300	Rated speed rpm : 700 Aneroid pressure
Aneroid pressure	: 1000	hPa : 1000 Del. quantity cm3/1000 strokes : 71.0
Del. quantity cm3/1000 strokes Tolerance	: 49.0	
cm3/1000 strokes Check tolerance	: 3.0	Check tolerance cm3/1000s. : 3.0
cm3/1000S. Shutoff solenoid	: 4.0	Shutoff solenoid Volt : 12
Volt	: 12	Rated speed rpm : 1500
Rated speed rpm Aneroid pressure	: 2450	Aneroid pressure hPa : 1000
hPa Del. quantity	: 1000	<pre>Del. quantity     cm3/1000 strokes : 68.0</pre>
cm3/1000 strokes Check tolerance	: 7.0	+ Tolerance + cm3/1000 strokes : 0.5
cm3/1000S. Shutoff solenoid	: 5.0	Check tolerance cm3/1000s. : 2.0
Volt	: 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm Aneroid pressure hPa	: 2650 : 1000	Ŧ
Del. quantity cm3/1000 strokes		ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
Tolerance cm3/1000 strokes		Rated speed rpm : 450
Check tolerance cm3/1000s.	: 1.5	Del. quantity cm3/1000 strokes : 1.5
Shutoff solenoid Volt	: 12	Tolerance cm3/1000 strokes : 1.5
Rated speed rpm	: 700	Check tolerance cm3/1000s. : 1.5
Aneroid pressure hPa	: 500	† idle delivery
Del. quantity cm3/1000 strokes Tolerance	: 58.5	Rated speed rpm : 800
cm3/1000 strokes	: 0.5	Del. quantity  cm3/1000 strokes : 4.0

Tolerance 2.5 cm3/1000 strokes : Check tolerance cm3/1000s. 4.0 Shutoff solenoid 12 Volt Rated speed rpm 500 Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 5.0 Shutoff solenoid 12 Volt

EXHAUST-GAS RECIRCULATION

1000 Rated speed rpm Aneroid pressure 1000 Del. quantity 50.0 cm3/1000 strokes : Tolerance 1.0 cm3/1000 strokes : Check tolerance cm3/1000s. 2.5 Shutoff solenoid 12 Volt

START TRANSITION

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 40.0
Tolerance
cm3/1000 strokes : 10.0
Shutoff solenoid

12

12

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 17.0

Shutoff solenoid
Volt :

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm : +-0,1 Dimension KF mm : 5,4
Tolerance mm : +-0,2
Dimension MS mm : 0,8
Tolerance mm : +-0,2

POTENTIOMETER

SET

1. measurement voltage Volt : 5,0
1. measurement

voltage Volt : 2,31

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 29,5..31,5

Control lever

position YB mm : 47,0..57,0

End of test-specification sheet

Volt

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.04.95 Test oil : ISO 4113

Part no. : 0 460 414 114 Pump designation : VE4/11F1250L613

Customer—spec. information
Customer : IVECO—FIAT
Motor : 8045.25.210
Power KW : 63.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

**REMARKS** 

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm : 2.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 800

Setting hPa : 6.0 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 67.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 3.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm 325 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes : 2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1325
Del. quantity
cm3/1000 strokes : 45.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid

12

STARTING FUEL DELIVERY

Volt

Rated speed rpm : 100 Del. quantity

cm3/1000 strokes : 90.0

Tolerance	25.0	+ Rated speed rpm : 400
cm3/1000 strokes Shutoff solenoid	: 25.0	+ Overflow quantity + ccm/10s : 63.8
Volt	: 12	Tolerance . 63.8
1011	• ''-	+ ccm/10s : 22.2
		+
		+ Check tolerance
		+ ccm/10s : 22.2
INJECTION-PUMP TE	CT CDECTETCATIONS	+ Shutoff solenoid + Volt : 12
TIMECITOR-FORE 15	SI SPECIFICATIONS	
TIMING DEVICE CHA	RACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Dotad appeal app	. 1150	Poted aread are 1735
Rated speed rpm	: 1150	+ Rated speed rpm : 1325 + Del. quantity
SV travel mm	: 6.4	cm3/1000 strokes : 45.0
Tolerance mm	: 0.4	+ Tolerance
Check		+ cm3/1000 strokes : 2.0
tolerance mm	: 0.7	+ Check tolerance
Shutoff solenoid	: 12	+ cm3/1000s. : 6.0
Volt	: 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm	: 700	1
	, , , , , ,	Rated speed rpm : 1300
SV travel mm	: 1.8	+ Del. quantity
Tolerance mm	: 0.4	+ cm3/1000 strokes : 55.0
Check	. 0.7	+ Tolerance
tolerance mm Shutoff solenoid	: 0.7	+ cm3/1000 strokes : 6.0 + Shutoff solenoid
Volt	: 12	- Volt : 12
.0(1	• • • •	+ 1011
SUPPLY PUMP PRESS	URE CHARACTERISTI	Rated speed rpm : 1420
		- Del. quantity
Rated speed rpm	: 1250	+ cm3/1000 strokes : 1.5
Supply pomp pressure bar	: 8.2	+ Tolerance + cm3/1000 strokes : 1.5
Tolerance hPa	: 0.3	Check tolerance
Shutoff solenoid	,	+ cm3/1000s. : 1.5
Volt	: 12	+ Shutoff solenoid
	4.00	+ Volt : 12
Rated speed rpm	: 400	†
Supply pomp pressure bar	: 4.0	+ Aneroid pressure + hPa :
Tolerance hPa	: 0.3	· · · · · · · · · · · · · · · · · · ·
Shutoff solenoid		→ LDA/
Volt	: 12	+ HBA stroke mm : 6,2
0.15051.011.01.4417777.		Data de mared mare de 1250
OVERFLOW QUANTITY		+ Rated speed rpm : 1250 + Del. quantity
Rated speed rpm	: 1250	cm3/1000 strokes : 59.5
Overflow quantity		+ Tolerance
ccm/10s	: 97.2	- cm3/1000 strokes : 1.5
Tolerance		+ Check tolerance
ccm/10s	: 41.6	+ cm3/1000s. : 3.5
Check tolerance		+ Shutoff solenoid + Volt : 12
ccm/10s	: 41.6	. 12
Shutoff solenoid		Rated speed rpm : 400
Volt	: 12	+ Del. quantity
		+ cm3/1000 strokes : 69.0

Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	:	1.5 3.5 12	
Rated speed rpm Del. quantity	:	800	
cm3/1000 strokes Tolerance	:	67.5	
cm3/1000 strokes	:	0.5	
Check tolerance cm3/1000s. Shutoff solenoid	:	3.0	
Volt	:	12	
ELECTR. SHUTOFF CONTROL LEVER, ID	LE ST	TOP	
Rated speed rpm	:	325	
Del. quantity cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 strokes	:	1.5	
Check tolerance	_		
cm3/1000s. Spread	:	1.5	
cm3/1000 strokes	:	5.0	
FULL-LOAD STOP CO	NTROL	LEVER	
Rated speed rpm Del. quantity	:	325	
cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 strokes	:	1.5	
Spread cm3/1000 strokes	:	5.0	
Check tolerance cm3/1000s.	:	1.5	
Spread cm3/1000 strokes	:	5.0	
IDLE DELIVERY			
Rated speed rpm	:	400	
Del. quantity cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 strokes	:	1.5	
Check tolerance cm3/1000s.	:	1.5	
Shutoff solenoid Volt	:	12	

# START TRANSITION

Tolerance

Rated speed rpm	:	250
Del. quantity cm3/1000 strokes	:	65.0
Tolerance cm3/1000 strokes	:	15.0
Shutoff solenoid Volt	;	12
Rated speed rpm	:	150
Del. quantity cm3/1000 strokes	:	100.0

cm3/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6,2
Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,5
Tolerance mm : +-0,2
Dimension MS mm : 0,8
Tolerance mm : +-0,2

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 06.09.95 Test oil : ISO 4113

Part no. : 0 460 485 024 Pump designation : VE5/8F2100L632

Customer-spec. information

: VW Customer

Motor : 2.41 WK SD 57.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

bar 147 Tolerance bar 3

: 1 680 750 000 Test Lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1250

Setting mm 2.4 Tolerance mm 0.2 Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Setting hPa 6.0 Tolerance hPa 0.3 : Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt 12

IDLE SETTING

Rated speed rpm 415

Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 strokes 1.0

Shutoff solenoid

12 Volt

Spread

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s.3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm 2400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes 2.0

Shutoff solenoid 12 Volt

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 60.0

Tolerance			+			
cm3/1000 strokes Shutoff solenoid	:	25.0	SUPPLY PUMP	PRESSURE	CHARACTER	ISTIC
Volt	:	12	Rated speed Supply pomp	•	1790	
			+ pressure bar		7.5	
			+ Tolerance hP		0.3	
LOAD-DEPENDENT ST	TART	OF DELIVERY	+ Shutoff sole	noid		
SETTING			† Volt	:	12	
DELIVERY DIFFEREN	1CE		Rated speed Supply pomp	rpm :	1000	
Rated speed rpm	:	1500	+ pressure bar	:	5.3	
Del. quantity			+ Tolerance hP		0.3	
cm3/1000 strokes	:	-7.0	+ Shutoff sole	noid		
Tolerance			+ Volt	:	12	
cm3/1000 strokes	:	1.0	+			
Shutoff solenoid		40	+ OVERFLOW QUA	NTITY		
Volt	:	12	†		2400	
			† Rated speed		2100	
PRESSURE DIFFEREN	ICE		+ Overflow qua	ntity	07.0	
Dahad amand and		1500	+ ccm/10s	:	97.2	
Rated speed rpm	:	1500	+ Tolerance		11 1	
Del. quantity		0.3	+ ccm/10s	:	41.6	
cm3/1000 strokes	:	-0.2				
Tolerance		0.4	+ Check tolera	nce	<b></b>	
cm3/1000 strokes	:	0.1	+ ccm/10s		55.5	
Shutoff solenoid		40	+ Shutoff sole	nota	40	
Volt	:	12	† Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	Rated speed	rpm :	600	
			+ Overflow quan			
Rated speed rpm	:	1500	+ ccm/10s	· :	63.8	
Del. quantity			+ Tolerance			
cm3/1000 strokes	:	-0.4	+ ccm/10s	:	22.2	
Tolerance			+			
cm3/1000 strokes	:	0.1	+ Check tolera	nce		
Shutoff solenoid			+ ccm/10s	:	34.7	
Volt	:	12	+ Shutoff sole	noid		
• • • • • • • • • • • • • • • • • • • •			+ Volt	:	12	
			<del> </del>			
INJECTION-PUMP TE	ST S	SPECIFICATIONS	+ DELIVERY AND	BREAKAW	AY CHARACTI	ERISTIC
TIMING DEVICE CHA	RACT	TERISTIC	+ Rated speed	rpm :	2400	
			+ Del. quantity	ý		
Rated speed rpm	:	1790	+ cm3/1000 str	okes :	12.0	
Tolerance mm	:	0.4	+ Tolerance			
Check			+ cm3/1000 str		2.0	
tolerance mm	:	0.7	+ Check tolerar	nce		
Shutoff solenoid			+ cm3/1000s.	:	4.0	
Volt	:	12	+ Shutoff soler	noid		
			+ Volt	:	12	
Rated speed rpm	:	1000	+			
•			+ Rated speed i		2300	
			+ Del. quantity	ý		
SV travel mm	:	1.1				
Tolerance mm	:	7.7 0.4	+ cm3/1000 str	okes :	22.0	
	:	0.4	+ Tolerance			
Tolerance mm	:		Tolerance cm3/1000 stro	okes :	22.0 5.0	
Tolerance mm Check	:	0.4 0.7	Tolerance cm3/1000 stro Check tolerar	okes :	5.0	
Tolerance mm Check tolerance mm	:	0.4	Tolerance cm3/1000 stro	okes :		

Shutoff solenoid Volt	;	12	Rated speed of Del. quantity		415
	. 1		+ cm3/1000 str		1.5
Rated speed rpm Del. quantity cm3/1000 strokes		3.0	+ Tolerance + cm3/1000 stro - Spread	okes :	1.5
Tolerance			+ cm3/1000 str		5.0
cm3/1000 strokes Check tolerance	:	3.0	+ Check tolerar - cm3/1000s.	nce :	1.5
cm3/1000s. Shutoff solenoid	:	3.0	Spread cm3/1000 stro		
Volt	:	12	- cm3/1000 stro	okes :	5.0
Rated speed rpm Del. quantity	: 2	100			
cm3/1000 strokes Tolerance	:	31.0			
cm3/1000 strokes Check tolerance	:	1.0	CHECKING LOAD START OF DELI		PENT
cm3/1000s.	:	2.2	1		
Shutoff solenoid Volt	:	12	├ DELIVERY DIFF	ERENCE	
Rated speed rpm	:	6 <b>00</b>	Rated speed r Del. quantity		1500
Del. quantity cm3/1000 strokes	•	33.8	cm3/1000 stro	okes :	-6.5
Tolerance			cm3/1000 stro		3.0
cm3/1000 strokes Check tolerance	:	1.5	<ul><li>Check tolerar</li><li>cm3/1000s.</li></ul>		4.0
cm3/1000s. Shutoff solenoid	:	3.0	+ Shutoff soler + Volt	noid :	12
Volt	:	12	+		
Rated speed rpm	: 1	250	├ TIMING-DEVICE ├	RAVEL	DIFFERENCE
Del. quantity cm3/1000 strokes		36.5	Rated speed r		1500
Tolerance		•	cm3/1000 stro		-0.4
cm3/1000 strokes Check tolerance	:	0.5	- Tolerance - cm3/1000 stro	kes :	0.1
cm3/1000s. Shutoff solenoid	:	2.2	Check tolerar		0.1
Volt	:	12	Shutoff solen	oid .	
		-	- Volt	:	12
ELECTR. SHUTOFF			DELIVERY DIFF	ERENCE	
CONTROL LEVER, ID	LE STOR	- -	- Rated speed r - Del. quantity		1500
Rated speed rpm	:	415 -	- cm3/1000 stro		1.5
Del. quantity cm3/1000 strokes	:	1.5	- Tolerance - cm3/1000 stro		1.5
Tolerance cm3/1000 strokes	:	1.5	- Check toleran - cm3/1000s.	:	1.5
Check tolerance cm3/1000s.	:	1.5	- Shutoff solen - Volt	oid :	12
Spread cm3/1000 strokes	:	5.0	- - PRESSURE DIFF	ERENCE	
FULL-LOAD STOP CO		-	- Rated speed r		1500

Supply pomp

pressure bar : -1.0 Tolerance hPa : 0.2

Shutoff solenoid

Volt : 12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500 Tolerance mm : 0.2

Check

tolerance mm : 0.6

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,8
Tolerance mm : +-0,2
Dimension MS mm : 1,4
Tolerance mm : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.03.95 Test oil : ISO 4113

Part no. : 0 460 485 027 Pump designation: VE5/8F2100L633-1

Customer-spec. information

Customer : VW

: 2,41 SD f. T4 Motor

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

147 bar 3 Tolerance bar

: 1 680 750 000 Test lines

Outside diameter : 6.00

2.00 x inside diameter : x length mm : 840

**REMARKS** 

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm 4.3 Tolerance mm 0.2 Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Setting hPa 7.4 Tolerance hPa 0.3

Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 35.5

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

IDLE SETTING

Rated speed rpm : 415

Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 strokes : 1.0

Shutoff solenoid

12 Volt

Spread

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s.3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12

Volt

STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

cm3/1000 strokes : 60.0

Tolerance cm3/1000 strokes	:	25.0		‡	SUPPLY PUMP PRESS	URE	CHARACTERISTIC
Shutoff solenoid Volt	•	12		1	Rated speed rpm	:	
1011	•			+	Supply pomp	•	
				+	pressure bar	:	8.1
LOAD-DEPENDENT ST	TART	OF DELIVE	RY	Ī	Tolerance hPa Shutoff solenoid	:	0.3
SETTING		0, 700110	,,,,	+	Volt	:	12
API TUPAU ATERAR	٠			+			4400
DELIVERY DIFFEREN	VCE			1	Rated speed rpm Supply pomp	:	1100
Rated speed rpm	:	1500		+	pressure bar	:	6.2
Del. quantity		7 0		+	Tolerance hPa	:	0.3
cm3/1000 strokes Tolerance	:	-7.0		İ	Shutoff solenoid Volt		12
cm3/1000 strokes	:	1.0		1	• • • • • • • • • • • • • • • • • • • •	•	••
Shutoff solenoid		40		+	OVERFLOW QUANTITY		
Volt	:	12		İ	Rated speed rpm		2100
PRESSURE DIFFEREN	ICE			1	Overflow quantity		2100
		4500		+	ccm/10s	:	97.2
Rated speed rpm Del. quantity	:	1500		1	Tolerance ccm/10s	:	41.6
cm3/1000 strokes	:	-0.2		Ţ	CCIII/ TOS	•	41.0
Tolerance				+	Check tolerance		
cm3/1000 strokes Shutoff solenoid	:	0.1		1	ccm/10s Shutoff solenoid	:	55.5
Volt	:	12		Ţ	Volt	:	12
			_	+	~		(00
TIMING-DEVICE TRA	IVEL	DIFFERENC	Ł	1	Rated speed rpm Overflow quantity		600
Rated speed rpm	:	1500		+	ccm/10s	:	63.8
Del. quantity		4.5		+	Tolerance		22.2
cm3/1000 strokes Tolerance	:	-1.2		Ī	ccm/10s	:	22.2
cm3/1000 strokes	:	0.1		+	Check tolerance		
Shutoff solenoid		10		+	ccm/10s	:	34.7
Volt	•	12		Ţ	Shutoff solenoid Volt	:	12
				+			
INJECTION-PUMP TE	ST S	SPECIFICAT.	IONS	‡	DELIVERY AND BREA	KAWA	AY CHARACTERISTIC
TIMING DEVICE CHA	RACT	TERISTIC		<u>†</u>	Rated speed rpm Del. quantity	:	2400
Rated speed rom	:	1790		Ţ	cm3/1000 strokes	:	12.0
Tolerance mm	:	0.4		+	Tolerance		
Check tolerance mm		0.7		1	cm3/1000 strokes Check tolerance	:	2.0
Shutoff solenoid	•	0.7		Ţ	cm3/1000s.	:	4.0
Volt	:	12		+	Shutoff solenoid		
Rated speed rpm		1100		İ	Volt	:	12
Rateu speed (pill	•	1100		Ţ	Rated speed rpm	:	2300
SV travel mm	:	1.6		+	Del. quantity		22.0
Tolerance mm Check	:	0.4		1	cm3/1000 strokes Tolerance	:	22.0
tolerance mm	:	0.7		+	cm3/1000 strokes	:	5.0
Shutoff solenoid		40		+	Check tolerance		4.0
Volt	:	12		+	cm3/1000s.	:	6.0

Shutoff solenoid Volt	:	12	‡			
Rated speed rpm Del. quantity	:	2600	<u> </u>	CHECKING LOAD-DE	DENIN	FAIT
cm3/1000 strokes Tolerance	:	3.0	1	START OF DELIVER		CIVI
cm3/1000 strokes Check tolerance	:	3.0	<u> </u>	DELIVERY DIFFEREN	VCE	
cm3/1000s. Shutoff solenoid	:	3.0	1	Rated speed rpm Del. quantity	:	1500
Volt	:	12	<u></u>	cm3/1000 strokes Tolerance	:	-10.5
Rated speed rpm Del. quantity	:	2100	+	cm3/1000 strokes Check tolerance	:	3.0
cm3/1000 strokes Tolerance	;	29.5	+	cm3/1000s. Shutoff solenoid	:	4.0
cm3/1000 strokes Check tolerance	:	1.0	+	Volt	:	12
cm3/1000s. Shutoff solenoid	:	2.2	+	TIMING-DEVICE TRA	AVEL	DIFFERENCE
Volt	:	12	+	Rated speed rpm Del. quantity		
Rated speed rpm Del. quantity			‡	cm3/1000 strokes Tolerance		
cm3/1000 strokes Tolerance			+	cm3/1000 strokes Check tolerance	:	0.1
cm3/1000 strokes Check tolerance		1.5	† +	cm3/1000S. Shutoff solenoid	:	0.1
cm3/1000s. Shutoff solenoid	:	3.0	+	Volt	:	12
Volt	:	12	‡	DELIVERY DIFFEREN		
Rated speed rpm Del. quantity			‡	Rated speed rpm Del. quantity		1500
cm3/1000 strokes Tolerance			+	cm3/1000 strokes Tolerance		1.5
cm3/1000 strokes Check tolerance	:	0.5	†	cm3/1000 strokes Check tolerance	:	1.5
cm3/1000s. Shutoff solenoid	:	2.2	‡	cm3/1000s. Shutoff solenoid	:	1.5
Volt	•	12	‡	Volt	:	12
			Ţ	PRESSURE DIFFEREN		
ELECTR. SHUTOFF CONTROL LEVER, ID	LE :	STOP	‡	Rated speed rpm Supply pomp		
Rated speed rpm	:	415	‡	pressure bar Tolerance hPa	:	-1.0 0.2
Del. quantity cm3/1000 strokes	:	1.5	‡	Shutoff solenoid Volt	:	12
Tolerance cm3/1000 strokes		1.5	‡	TIMING-DEVICE TRA	VEL	DIFFERENCE
Check tolerance cm3/1000s.		1.5	‡	Rated speed rpm		1500 0.2
Spread cm3/1000 strokes	:	5.0	-	Tolerance mm Check tolerance mm		
			‡	Shutoff solenoid Volt	:	12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,8
Tolerance mm : +-0,2
Dimension MS mm : 1,4
Tolerance mm : +-0,1

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 06.09.95 Edition Test oil : ISO 4113

Part no. : 0 460 485 028 Pump designation: VE5/8F2100L633-2

Customer-spec. information Customer : VW Motor

: 2,41 SD Power KW 57.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

147 bar 3 Tolerance bar

: 1 680 750 000 Test lines

6.00 Outside diameter :

2.00 x inside diameter : x Length mm 840 :

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1500 Rated speed rpm :

Setting mm : 4.3 0.2 Tolerance mm

Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

1500 Rated speed rpm

Setting hPa 7.4 Tolerance hPa 0.3

Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

: 1250 Rated speed rpm Del. quantity

cm3/1000 strokes : 36.5

Tolerance

cm3/1000 strokes : 0.5 Spread

cm3/1000 strokes 2.0 Shutoff solenoid

Volt 12

IDLE SETTING

Rated speed rpm 415

Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 strokes 1.0

Shutoff solenoid

Volt 12

Spread

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s. 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm 2400

Del. quantity cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 60.0

Tolerance			+				
cm3/1000 strokes Shutoff solenoid	:	25.0	<u> </u>	SUPPLY PUMP PRESS	URE	CHARACTE	RISTIC
Volt	:	12	+	Rated speed rpm	:	1790	
			<u>†</u>	Supply pomp pressure bar		8.1	
			Ţ	Tolerance hPa	:	0.3	
LOAD-DEPENDENT ST	ART	OF DELIVERY	+	Shutoff solenoid	•		
SETTING			†	Volt	:	12	
DELIVERY DIFFEREN	CE		Ī	Rated speed rpm Supply pomp	:	1100	
Rated speed rpm	:	1500	+	pressure bar	:	6.2	
Del. quantity cm3/1000 strokes		-7.0	†	Tolerance hPa	:	0.3	
Tolerance	;	-7.0	Ī	Shutoff solenoid Volt		12	
cm3/1000 strokes	:	1.0	1	VOCE	•	, ,	
Shutoff solenoid			+	OVERFLOW QUANTITY			
Volt	:	12	+			2400	
DDECCUDE ATEEDEN	CE		†	Rated speed rpm Overflow quantity	:	2100	
PRESSURE DIFFEREN	CE		I	ccm/10s		97.2	
Rated speed rpm	:	1500	1	Tolerance	•	/···	
Del. quantity			+	ccm/10s	:	41.6	
cm3/1000 strokes	:	-0.2	+				
Tolerance		0.1	†	Check tolerance ccm/10s		55.5	
cm3/1000 strokes Shutoff solenoid	•	0.1	I	Shutoff solenoid	•	22.2	
Volt	:	12	+	Volt	:	12	
TIMING-DEVICE TRA	VFI	DIFFERENCE	<u> </u>	Rated speed rpm		600	
THING PEVICE INA	V	שבוויו בוועםויים	1	Overflow quantity	•	900	
Rated speed rpm	:	1500	+	ccm/10s	:	63.8	
Del. quantity		4.0	+	Tolerance			
cm3/1000 strokes Tolerance	:	-1.2	†	ccm/10s	:	22.2	
cm3/1000 strokes		0.1	I	Check tolerance			
Shutoff solenoid	•	3.1	1	ccm/10s	:	34.7	
Volt	:	12	+	Shutoff solenoid			
			+	Volt	:	12	
INJECTION-PUMP TE	ST S	SPECIFICATIONS	<del></del> ‡	DELIVERY AND BREAK	KAWA	Y CHARACT	TERISTIC
TIMING DEVICE CHAP	RACT	TERISTIC	+	Rated speed rpm	:	2400	
Rated speed rpm	:	1790	I	Del. quantity cm3/1000 strokes	:	12.0	
Tolerance mm	:	0.4	+	Tolerance	•		
Check			+	cm3/1000 strokes	:	2.0	
tolerance mm	:	0.7	†	Check tolerance		, 0	
Shutoff solenoid Volt		12	1	cm3/1000S. Shutoff solenoid	:	4.0	
vott	•	12	I	Volt	:	12	
Rated speed rpm	:	1100	+	· · · · ·	-		
			+	Rated speed rpm	:	2300	
SV travel mm	:	1.6	†	Del. quantity		22.0	
Tolerance mm Check	:	0.4	İ	cm3/1000 strokes Tolerance	:	22.0	
tolerance mm	:	0.7	Ţ	cm3/1000 strokes	:	5.0	
Shutoff solenoid	-		+	Check tolerance	-		
Volt	:	12	+	cm3/1000S.	:	ა.0	

Shutoff solenoid Volt	:	12 ‡	Rated speed rpm : Del. quantity	
Rated speed rpm	: 2600	1	cm3/1000 strokes : Tolerance	1.5
Del. quantity cm3/1000 strokes		.0	cm3/1000 strokes : Spread	1.5
Tolerance cm3/1000 strokes		.0	cm3/1000 strokes : Check tolerance	5.0
Check tolerance cm3/1000s.		.0	cm3/1000s. : Spread	1.5
Shutoff solenoid		12	cm3/1000 strokes :	5.0
Rated speed rpm		+		
Del. quantity		+		
cm3/1000 strokes Tolerance		+		
cm3/1000 strokes Check tolerance		.0 ‡	CHECKING LOAD-DEPENDE START OF DELIVERY	ENT
cm3/1000s. Shutoff solenoid		.2	DELIVERY DIFFERENCE	
Volt	:	12 ‡	Rated speed rpm :	1500
Rated speed rpm Del. quantity		<del>}</del>	Del. quantity cm3/1000 strokes :	-10.5
cm3/1000 strokes Tolerance	: 34	.3	Tolerance cm3/1000 strokes :	3.0
cm3/1000 strokes Check tolerance	: 1	.5	Check tolerance cm3/1000s. :	4.0
cm3/1000s. Shutoff solenoid	: 3	.0	Shutoff solenoid Volt :	12
Volt	:	12	TIMING-DEVICE TRAVEL	DIFFERENCE
Rated speed rpm Del. quantity	: 1250	+	Rated speed rpm :	
cm3/1000 strokes Tolerance	: 36	.5	Del. quantity cm3/1000 strokes :	-1.2
cm3/1000 strokes	: 0	.5	Tolerance cm3/1000 strokes :	0.1
Check tolerance cm3/1000s.	: 2	.2	Check tolerance	
Shutoff solenoid Volt	:	12 🕇	cm3/1000S. : Shutoff solenoid	0.1
		‡	Volt :	12
ELECTR. SHUTOFF			DELIVERY DIFFERENCE	
CONTROL LEVER, ID	LE STOP	+	Rated speed rpm : Del. quantity	1500
Rated speed rpm Del. quantity	: 415	1	cm3/1000 strokes : Tolerance	1.5
cm3/1000 strokes Tolerance	: 1	.5	cm3/1000 strokes : Check tolerance	1.5
cm3/1000 strokes Check tolerance	: 1.	.5	cm3/1000s. : Shutoff solenoid	1.5
cm3/1000s.	: 1.	.5	Volt :	12
Spread cm3/1000 strokes	: 5.	0	PRESSURE DIFFERENCE	
FULL-LOAD STOP COM	NTROL LEVE	ER +	Rated speed rpm :	1500

Supply pomp

pressure bar : -1.0 Tolerance hPa : 0.2

Shutoff solenoid

Volt : 12

#### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500 Tolerance mm : 0.2

Check

tolerance mm : 0.6

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,8
Tolerance mm : +-0,2
Dimension MS mm : 1,4
Tolerance mm : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.06.92 Test oil : ISO 4113

: 0 460 484 010 Part no. Pump designation : VE4/8F2300R171

Customer-spec. information : PSA Customer : XUD7 Motor

TEST BENCH REQUIREMENTS

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 : 450 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1250 Rated speed rpm :

3.6 Setting mm 0.2 Tolerance mm

H09

Shutoff solenoid 12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Setting hPa 4.6 Tolerance hPa 0.3 :

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity 28.5 cm3/1000 strokes :

Tolerance cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm

Del. quantity

cm3/1000 strokes : 4.0

Tolerance

cm3/1000 strokes : 0.5 Shutoff solenoid

12 Volt

FULL-LOAD SPEED REGULATION

2440 Rated speed rpm

Del. quantity cm3/1000 strokes : 22.0

Tolerance

cm3/1000 strokes : 3.0

Shutoff solenoid

Volt 12

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 62.0

Tolerance

cm3/1000 strokes 20.0

Shutoff solenoid

12 Volt

LOAD-DEPENDENT START OF DELIVERY

SETTING

			+	Shutoff solenoid			
DELIVERY DIFFEREN	1CE		‡	Volt	:	12	
Rated speed rpm Del. quantity	: 1	250	+	Rated speed rpm Supply pomp	:	800	
cm3/1000 strokes Tolerance	:	-6.0	<u> </u>	pressure bar Tolerance hPa	:	3.3 0.3	
cm3/1000 strokes Shutoff solenoid		1.0	<u> </u>	Shutoff solenoid Volt	:	12	
Volt	:	12	<u> </u>	OVERFLOW QUANTITY			
PRESSURE DIFFEREN	ICE		+			2250	
Rated speed rpm Del. quantity	: 1	250	Ī	Rated speed rpm Overflow quantity ccm/10s		97.2	
cm3/1000 strokes Tolerance	:	-0.2	Ī	Tolerance ccm/10s	•	41.6	
cm3/1000 strokes Shutoff solenoid	:	0.1	Ŧ	Check tolerance	•	41.0	
Volt	:	12	Ŧ	ccm/10s Shutoff solenoid	:	41.6	
TIMING-DEVICE TRA	VEL DI	FFERENCE	$\frac{1}{1}$	Volt	:	12	
Rated speed rpm Del. quantity	: 17	250	+	Rated speed rpm Overflow quantity		500	
cm3/1000 strokes Tolerance	:	-1.0	‡	ccm/10s Tolerance	:	62.5	
cm3/1000 strokes Shutoff solenoid	:	0.1	‡	ccm/10s	:	20.8	
Volt	:	12	+	Check tolerance ccm/10s	:	20.8	
INJECTION-PUMP TE	ST SPE	CIFICATIONS	<del> </del>	Shutoff solenoid Volt	:	12	
TIMING DEVICE CHA	RACTER:	ISTIC	‡	DELIVERY AND BREAK	(AWA	Y CHARACTE	ERISTIC
Rated speed rpm	: 20	000	<u> </u>	Rated speed rpm Del. quantity	:	2440	
SV travel mm Tolerance mm	:	7.9 0.4	Ī	cm3/1000 strokes Tolerance	:	22.0	
Check tolerance mm	•	0.7	$\frac{1}{1}$	cm3/1000 strokes Check tolerance	:	3.0	
Shutoff solenoid	•	12	1	cm3/1000S. Shutoff solenoid	:	4.0	
Rated speed rpm	•	300	1	Volt	:	12	
SV travel mm		1.2	1	Rated speed rpm Del. quantity	:	2690	
Tolerance mm	:	0.4	$\frac{1}{1}$	cm3/1000 strokes Check tolerance	:	7.0	
tolerance mm Shutoff solenoid	:	0.7	$\frac{1}{1}$	cm3/1000s. Shutoff solenoid	:	3.5	
Volt	:	12	1	Volt	:	12	
SUPPLY PUMP PRESS	URE CHA	ARACTERISTIC	1	Rated speed rpm Del. quantity	:	2540	
Rated speed rpm Supply pomp	: 20	)00	‡	cm3/1000 strokes Tolerance	:	14.5	
pressure bar Tolerance hPa	:	6.7 0.3	‡	cm3/1000 strokes	:	3.0	

			1 6 1 1 1 1
Check tolerance cm3/1000s.		4.5	+ Del. quantity + cm3/1000 strokes : 1.5
Shutoff solenoid	;	4.3	Tolerance
Volt		12	cm3/1000 strokes : 1.5
7011	٠	; _	Check tolerance
Rated speed rpm	•	2250	+ cm3/1000s. : 1.5
Del. quantity	•	2070	+ Shutoff solenoid
cm3/1000 strokes	:	28.5	+ Volt : 12
Tolerance			+
cm3/1000 strokes	:	1.0	
Check tolerance			† ELECTR. SHUTOFF
cm3/1000s.	:	2.3	+ CONTROL LEVER, IDLE STOP
Shutoff solenoid		4.0	†
Volt	:	12	Rated speed rpm : 375
Dakad assaul assa		900	Del. quantity
Rated speed rpm	:	800	+ cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes		29.0	+ Tolerance + cm3/1000 strokes : 1.5
Tolerance	•	47.0	Check tolerance
cm3/1000 strokes	•	1.0	- cm3/1000s. : 1.5
Check tolerance	•		1.5
cm3/1000s.	:	3.0	+
Shutoff solenoid	-		+
Volt	:	12	+
			+
Rated speed rpm	:	2000	+
Del. quantity			
cm3/1000 strokes	:	28.5	+ CHECKING LOAD-DEPENDENT
Tolerance		4 0	+ START OF DELIMERY
cm3/1000 strokes		1.0	DEL TUEDA DE SECUENCE
Check tolerance		2.3	+ DELIVERY DIFFERENCE
cm3/1000s. Shutoff solenoid	•	2.3	Rated speed rpm : 1250
Volt	•	12	Del. quantity
VO(2	•	, _	+ cm3/1000 strokes : -9.0
Rated speed rpm	:	500	+ Tolerance
Del. quantity	-		+ cm3/1000 strokes : 2.0
cm3/1000 strokes	:	29.5	+ Check tolerance
Tolerance			+ cm3/1000s. : 5.0
cm3/1000 strokes	:	1.5	+ Shutoff solenoid
Check tolerance			† Volt : 12
cm3/1000s.	:	3.0	†
Shutoff solenoid		40	† TIMING-DEVICE TRAVEL DIFFERENCE
Volt	:	12	Doted aread are : 1350
Dated anded and		1250	Rated speed rpm : 1250
Rated speed rpm Del. quantity	÷	1250	+ Del. quantity + cm3/1000 strokes : -1.0
cm3/1000 strokes		28.5	+ Tolerance
Tolerance	•	20,0	cm3/1000 strokes : 0.1
cm3/1000 strokes	:	0.5	+ Check tolerance
Check tolerance		- · ·	+ cm3/1000s. : 0.1
cm3/1000s.		2.3	+ Shutoff solenoid
Shutoff solenoid			+ Volt : 12
Volt	:	12	+
			+ DELIVERY DIFFERENCE
***************************************			<del></del>
MECHANICAL SHUTOF	F		+ Rated speed rpm : 1250
0-4-4		2250	+ Del. quantity
Rated speed rpm	:	2250	+ cm3/1000 strokes : 5.0

Tolerance 3.0 cm3/1000 strokes : Check tolerance 3.0 cm3/1000s.

Shutoff solenoid

12 Volt

PRESSURE DIFFERENCE

1250 Rated speed rpm :

Supply pomp

-0.8 pressure bar 0.3 Tolerance hPa :

Shutoff solenoid

Volt 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250 Tolerance mm 0.5

Check

tolerance mm 0.6

Shutoff solenoid

12 Volt

START TRANSITION

300 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 24.0

Tolerance

10.0 cm3/1000 strokes :

Shutoff solenoid

12 Volt

Rated speed rpm 200

Del. quantity

cm3/1000 strokes : 64.0

Tolerance

cm3/1000 strokes : 20.0

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 : +0,1 Tolerance mm : 5,5

Dimension KF mm Tolerance mm : +-0,2 Dimension MS mm : 1,4

Tolerance mm : +-0,2

CONTROL LEVER POSITION

SET

Control lever

: 19,7..21,7 position YA mm

Control lever

position YB mm : 84,0..96,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 01.04.95 Edition Test oil : ISO 4113

: 0 460 416 036 Part no. Pump designation: VE6/11F1250R181

Customer-spec. information : IVECO-FIAT Customer : 8065.05.200 Motor Power KW 74.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

0.55 restriction mm

0.35 Inlet press. bar Tolerance bar 0.05

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

bar 172 Tolerance bar

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 840 x length mm :

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1000 0.2 Tolerance mm

Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 1000

5.5 Setting hPa Tolerance hPa 0.3

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 800

Del. quantity

cm3/1000 strokes : 64.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.5 Shutoff solenoid

12 Volt

IDLE SETTING

Rated speed rpm 325

Del. quantity cm3/1000 strokes : 10.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

Spread

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s.4.0

FULL-LOAD SPEED REGULATION

Rated speed rpm 1350

Del. quantity

cm3/1000 strokes : 36.0

Tolerance

3.0 cm3/1000 strokes :

Shutoff solenoid

Volt 12

STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

cm3/1000 strokes : 120.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid Volt	: 12	+ Check tolerance		
		ccm/10s Shutoff solenoid	:	22.2
		Volt	:	12
INJECTION—PUMP TE	ST SPECIFICATIONS	- DELIVERY AND BREA	KAWA	Y CHARACTERISTIC
		Rated speed rpm	:	1350
TIMING DEVICE CHA		+ Del. quantity + cm3/1000 strokes	:	36.0
Rated speed rpm Tolerance mm	: 600 : 0.4	+ Tolerance + cm3/1000 strokes	:	3.0
Check tolerance mm	: 0.7	+ Check tolerance + cm3/1000s.	:	6.0
Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt	•	12
VOCE		7	•	
Rated speed rpm Tolerance mm	: 1250 : 0.4	Rated speed rpm Del. quantity		
Check tolerance mm	: 0.7	cm3/1000 strokes Shutoff solenoid	:	5.5
Shutoff solenoid Volt	: 12	Volt	:	12
		Rated speed rpm	:	1450
	URE CHARACTERISTIC	+ Del. quantity + cm3/1000 strokes	:	1.5
Rated speed rpm Supply pomp	: 1250	+ Tolerance + cm3/1000 strokes	:	1.5
pressure bar Tolerance hPa	: 6.6 : 0.3	+ Check tolerance + cm3/1000s.	:	1.5
Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt	•	12
		+	•	
Rated speed rpm Supply pomp		+ Rated speed rpm + Del. quantity		
pressure bar Tolerance hPa	: 3.4 : 0.3	+ cm3/1000 strokes + Tolerance	:	54.5
Shutoff solenoid Volt	: 12	cm3/1000 strokes Check tolerance	:	1.5
OVERFLOW QUANTITY		+ cm3/1000s. + Shutoff solenoid	:	3.5
		+ Volt	:	12
Rated speed rpm Overflow quantity		Rated speed rpm	:	500
ccm/10s Tolerance	: 97.2	+ Del. quantity + cm3/1000 strokes	:	61.0
ccm/10s	: 41.6	Tolerance cm3/1000 strokes	:	1.5
Check tolerance ccm/10s	: 41.6	Check tolerance cm3/1000s.	•	3.5
Shutoff solenoid		+ Shutoff solenoid	•	
Volt	: 12	+ Volt	:	12
Rated speed rpm Overflow quantity	: 500	Rated speed rpm Del. quantity	:	800
ccm/10s Tolerance	: 63.8	cm3/1000 strokes Tolerance	:	64.0
ccm/10s	: 22.2	cm3/1000 strokes	:	0.5

Check tolerance cm3/1000S.	: 3.0	START TRANSITION	
Shutoff solenoid Volt	: 12		250
		Del. quantity cm3/1000 strokes : Tolerance	50.0
ELECTR. SHUTOFF CONTROL LEVER, ID	OLE STOP	cm3/1000 strokes : Shutoff solenoid	10.0
ביינות בביינות ביינות		+ Volt :	12
Rated speed rpm Del. quantity	: 325		
cm3/1000 strokes Tolerance	: 1.5	Rated speed rpm : Del. quantity	150
cm3/1000 strokes Check tolerance	: 1.5	cm3/1000 strokes : Tolerance	120.0
cm3/1000S. Spread	: 1.5	cm3/1000 strokes : Shutoff solenoid	25.0
cm3/1000 strokes	: 5.0	Volt :	12
FULL-LOAD STOP CO	NTROL LEVER	ASSEMBLY AND ADJUSTMENT	DIMENICION
Rated speed rpm Del. quantity	: 325	Dimension K mm : 3,3	
cm3/1000 strokes	: 1.5	Tolerance mm : +-0	1,1
Tolerance cm3/1000 strokes	: 1.5	+ Tolerance mm : +-0	1,2
Spread cm3/1000 strokes	: 5.0	+ Dimension MS mm : 1,6 + Tolerance mm : +-0	
Check tolerance cm3/1000s.	: 1.5	‡	
Spread cm3/1000 strokes	: 5.0	CONTROL LEVER POSITION	
IDLE DELIVERY		+ SET +	
Rated speed rpm	: 400	Control lever	
Del. quantity cm3/1000 strokes	: 1.5	+	936,9
Tolerance cm3/1000 strokes	: 1.5	+ Control lever + position YB mm : 45,	751,1
Check tolerance cm3/1000s.	: 1.5	‡	
Shutoff solenoid Volt	: 12		
Rated speed rpm	: 360	+ End of test-specificati	on sheet
Del. quantity cm3/1000 strokes	: 5.0	‡	
Tolerance cm3/1000 strokes	: 3.0	+	
Check tolerance cm3/1000s.	: 4.0	‡	
Shutoff solenoid Volt	: 12	‡	
		<del>†</del>	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.06.95 Test oil : ISO 4113

Part no. : 0 460 426 143 Pump designation : VE6/12F1150R225-23

Customer-spec. information Customer : CDC

Motor : 6 BT -5.9 IND

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,3 Tolerance mm : +-0,02

Outlet : D

Prestroke

(as of UT) mm : 0.3Tolerance mm : +-0.02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 750

Setting mm : 3.6
Tolerance mm : 0.2

Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 750

Setting hPa : 3.8 Tolerance hPa : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1150 Del. quantity

cm3/1000 strokes : 71.5

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0 Shutoff solenoid

Volt : 12

IDLE SETTING

Rated speed rpm : 375

Del. quantity

cm3/1000 strokes : 11.0

12

Tolerance

cm3/1000 strokes : 3.0 Shutoff solenoid

Volt Spread

cm3/1000 strokes : 5.5

Check tolerance cm3/1000s. : 7.0

FULL-LOAD SPEED REGULATION

		1				
Rated speed rpm Del. quantity	: 1220	-	OVERFLOW QUANTITY	1		
cm3/1000 strokes Tolerance	: 53.0	+	Rated speed rpm Overflow quantity		1150	
cm3/1000 strokes Shutoff solenoid		<u> </u>	ccm/10s Tolerance	:	97.2	
Volt	: 12	‡	ccm/10s	:	41.6	
STARTING FUEL DEL	LIVERY	1	Check tolerance ccm/10s	:	41.6	
Rated speed rpm Del. quantity	: 100	<u> </u>	Shutoff solenoid Volt	•	12	
cm3/1000 strokes Tolerance	: 90.0	+	Rated speed rpm	:		
cm3/1000 strokes Shutoff solenoid		+	Overflow quantity ccm/10s		63.8	
Volt	: 12	1	Tolerance ccm/10s	:	22.2	
		1	Check tolerance			
18-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		‡	ccm/10s Shutoff solenoid	:	22.2	
INJECTION-PUMP TE	EST SPECIFICATIONS	<u> </u>	Volt	:	12	
TIMING DEVICE CHA	ARACTERISTIC	+	DELIVERY AND BREA	KAWA	AY CHARACTERIST	IC
Rated speed rpm	: 1100	+	Rated speed rpm Del. quantity	:	1220	
SV travel mm Tolerance mm	: 5.9 : 0.4	‡	cm3/1000 strokes Tolerance	:	53.0	
Check tolerance mm	: 0.7	‡	cm3/1000 strokes Check tolerance		3.0	
Shutoff solenoid Volt	: 12	‡	cm3/1000s. Shutoff solenoid	:	6.0	
Rated speed rpm	: 500	‡	Volt	:	12	
SV travel mm	: 1.9	‡	Rated speed rpm Del. quantity			
Tolerance mm Check	: 0.4	‡	cm3/1000 strokes Check tolerance	:		
tolerance mm Shutoff solenoid	: 0.7	‡	cm3/1000s. Shutoff solenoid	:	20.0	
Volt	: 12	‡	Volt	:	12	
	SURE CHARACTERISTIC	‡	Rated speed rpm Del. quantity	:	1300	
Rated speed rpm Supply pomp	: 1100	‡	cm3/1000 strokes Tolerance		1.5	
pressure bar Tolerance hPa	: 5.1 : 0.3	‡	cm3/1000 strokes Check tolerance	:	1.5	
Shutoff solenoid Volt	: 12	‡	cm3/1000s. Shutoff solenoid	:	1.5	
Rated speed rpm	: 500	‡	Volt	:	12	
Supply pomp pressure bar	: 2.7	‡	Rated speed rpm Del. quantity	:	750	
Tolerance hPa Shutoff solenoid	: 0.3	‡	cm3/1000 strokes Tolerance		77.0	
Volt	: 12	+	cm3/1000 strokes	:	2.0	

Check tolerance		+	Del. quantity	
cm3/1000s.	: 3.0	+	cm3/1000 strokes	: 1.5
Shutoff solenoid	••	+	Tolerance	
Volt	: 12	†	cm3/1000 strokes	: 1.5
Rated speed rpm	: 500	I	Spread cm3/1000 strokes	: 5.0
Det. quantity	. 500	I	Check tolerance	. 5.0
cm3/1000 strokes	: 62.5	1	cm3/1000s.	: 1.5
Tolerance		+	Spread	
cm3/1000 strokes	: 4.0	+	cm3/1000 strokes	: 5.0
Check tolerance	: 6.0	†	TALE NELTHERY	
cm3/1000S. Shutoff solenoid	; 6.0	Ī	IDLE DELIVERY	
Volt	: 12	1	Rated speed rpm	: 450
		+	Del. quantity	
Rated speed rpm	: 1150	+	cm3/1000 strokes	: 2.0
Del. quantity	74 5	†	Tolerance	2.0
cm3/1000 strokes	: 71.5	†	cm3/1000 strokes Check tolerance	: 2.0
Tolerance cm3/1000 strokes	: 0.5	Ī	cm3/1000S.	: 2.0
Check tolerance	. 0.5	1	Shutoff solenoid	. 2.0
cm3/1000S.	: 3.0	1	Volt	: 12
Shutoff solenoid		+		
Volt	: 12	+		
MECHANICAL SHUTOF	F	I		
	•	+		
Rated speed rpm	: 1150	+	START TRANSITION	
Del. quantity	4 -	+		2/0
cm3/1000 strokes	: 1.5	†	Rated speed rpm	: 240
Tolerance cm3/1000 strokes	: 1.5	Ī	Del. quantity cm3/1000 strokes	: 40.0
Spread	• ,•5	1	Tolerance	. (3.3
cm3/1000 strokes	: 5.0	+	cm3/1000 strokes	: 20.0
Check tolerance		+	Shutoff solenoid	4.4
cm3/1000s.	: 1.5	†	Volt	: 12
Spread cm3/1000 strokes	: 5.0	<u>†</u>		
Shutoff solenoid	. 5.0	I	Rated speed rpm	: 130
Volt	: 12	1	Del. quantity	
		+	cm3/1000 strokes	: 100.0
P. PAPE ALL	<del></del>	+	Tolerance	. 70.0
ELECTR. SHUTOFF CONTROL LEVER, ID	IE STOD	†	cm3/1000 strokes Shutoff solenoid	: 30.0
CONTROL LEVER, ID	LE STOP	I	Volt	: 12
Rated speed rpm	: 375	1	<del></del>	· ·
Del. quantity		+		
cm3/1000 strokes	: 1.5	+	ASSEMBLY AND ADJUS	STMENT DIMENSIONS
Tolerance	. 15	†	Nimensian VE mm	. 5 2
cm3/1000 strokes Check tolerance	: 1.5	Ī	Dimension KF mm Tolerance mm	: 5,2 : +-0,2
cm3/1000s.	: 1.5	<b>1</b>	MS1 dimension mm	
Spread		+	Tolerance mm	: +0.15/-0,1
cm3/1000 strokes	: 5.0	+		
P	NTDOL LEVES	+		
FULL-LOAD STOP CO	NIROL LEVER	†	CONTROL LEVER POS	TTION
Rated speed rpm	: 375	I	SET	T I TOIL
hatea opeea (pii)	2, 2, 3	<del> </del>	- <del>-</del> -	
		•		

Control lever position YA mm : 35,8..37,8

Control lever

: 41,5..47,1 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 13.03.95 Edition : ISO 4113 Test oil

Part no. : 0 460 414 124 Pump designation : VE4/11F2250R274-1

Customer-spec. information Customer : PERKINS

: Prima M 80 T Motor

Power KW 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C 45 Tolerance °C 1

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar 3

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450 :

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1500 Rated speed rpm :

Aneroid pressure

1000 hPa

3.8 Setting mm Tolerance mm 0.2

SUPPLY PUMP PRESSURE

1500 Rated speed rpm

Aneroid pressure

hPa 1000 :

7.1 Setting hPa Tolerance hPa : 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500 Aneroid pressure

1000 hPa

Del. quantity cm3/1000 strokes : 61.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s.4.0

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600 Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance cm3/1000s.

4.0

Check tolerance

cm3/1000s.4.0

IDLE SETTING

Rated speed rpm 350

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes : 1.0

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm Pressure hPa Del. quantity	:	2500 1000		† †	Aneroid pressure hPa Overflow quantity ccm/10s	:	1000 97.2	
cm3/1000 strokes Tolerance	:	40.0		1	Tolerance ccm/10s	:	41.6	
cm3/1000 strokes	:	2.0		1	Check tolerance	•	41.0	
STARTING FUEL DEL	.IVER	r		+	ccm/10s	:	41.6	
Rated speed rpm Del. quantity	:	100		‡	Rated speed rpm Aneroid pressure	:	600	
cm3/1000 strokes Tolerance		80.0		+	hPa Overflow quantity	:	1000	
cm3/1000 strokes	:	18.0		‡	ccm/10s Tolerance	:	63.8	
				‡	ccm/10s	:	22.2	
THE CETON DUMP TO			ONIC	+	Check tolerance ccm/10s	:	22.2	
INJECTION-PUMP TE			OIA2	Ī	DELIVERY AND BREA	KAWA	AY CHARACTERIST	ΓIC
Rated speed rpm	:	1900		‡	Rated speed rpm Aneroid pressure	:	2500	
Aneroid pressure hPa	:	1000		+	hPa Del. quantity	:	1000	
Tolerance mm Check	:	0.5		‡	cm3/1000 strokes Tolerance		40.0	
tolerance mm	:	0.7		‡	cm3/1000 strokes Check tolerance		2.0	
Rated speed rpm Aneroid pressure	:	1100		+	cm3/1000s.	:	6.0	
hPa	•	1.4		Ŧ	Rated speed rpm Aneroid pressure hPa	:	2450 1000	
SV travel mm Tolerance mm Check	:	0.5		Ī	Del. quantity cm3/1000 strokes		60.0	
tolerance mm	:	0.7		+	Tolerance cm3/1000 strokes		6.0	
SUPPLY PUMP PRESS			STIC	+	Rated speed rpm	:	2700	
Rated speed rpm Aneroid pressure	:	1900		+	Aneroid pressure hPa	:	1000	
hPa Supply pomp	:	1000		+	Del. quantity cm3/1000 strokes	:	1.5	
pressure bar Tolerance hPa	:	8.0 0.3		Ŧ	Tolerance cm3/1000 strokes Check tolerance	:	1.5	
Rated speed rpm Aneroid pressure	:	600		Ī	cm3/1000s.	:	1.5	
hPa Supply pomp	:	1000		1	Rated speed rpm Aneroid pressure	:	600	
pressure bar Tolerance hPa	:	5.1 0.3		‡	hPa	:	300	
OVERFLOW QUANTITY				‡	LDA/ HBA stroke mm	:	6.1	
Rated speed rpm	:	2250		<u> </u>	Del. quantity cm3/1000 strokes	:	37.0	
				•				

Tolerance			+	Shutoff solenoid	
cm3/1000 strokes	:	0.5	+	Volt	: 12
Check tolerance			+		
cm3/1000s.	:	4.5	+		
			1	IDLE DELIVERY	
Rated speed rpm	: 22	50	1	TACC ACCTACION	
		<b>50</b>	Ţ	Dottod amount was	: 500
Aneroid pressure		4000	T	Rated speed rpm	: 500
hPa	:	1000	†	Del. quantity	
Del. quantity			+	cm3/1000 strokes	: 1.5
cm3/1000 strokes	: (	66.7	+	Tolerance	
Tolerance			+	cm3/1000 strokes	: 1.5
cm3/1000 strokes	:	2.0	1	Check tolerance	
Check tolerance	•		1	cm3/1000s.	: 1.5
cm3/1000s.	•	3.0	1	cm3/10000:	• • • • • • • • • • • • • • • • • • • •
CHD7 10005.	•	3.0	T	Dotad amond was	: 250
		22	†	Rated speed rpm	: 250
Rated speed rpm		00	†	Del. quantity	22 2
Aneroid pressure			+	cm3/1000 strokes	: 22.0
hPa	: '	1000	+	Tolerance	
Del. quantity			+	cm3/1000 strokes	: 6.0
cm3/1000 strokes	: '	58.5	1		
Tolerance	•	<del></del>	1		
cm3/1000 strokes	•	4.0	1		
Check tolerance	•	7.0	T		
		5.0	Ť		
cm3/1000s.	:	5.0	†		
			†		
Rated speed rpm		<b>30</b>	+	START TRANSITION	
Aneroid pressure			+		
hPa	: ′	1000	+	Rated speed rpm	: 500
Del. quantity			1	Del. quantity	
cm3/1000 strokes		51.0	1	cm3/1000 strokes	: 20.0
Tolerance	•	, . <b>.</b> .	1	Tolerance	. 20.0
		0.5	T		: 10.0
cm3/1000 strokes	•	0.5	T	cm3/1000 strokes	: 10.0
Check tolerance			†		
cm3/1000s.	:	3.0	+		
			+	Rated speed rpm	: 350
			+	Del. quantity	
MECHANICAL SHUTOR	-F		+	cm3/1000 strokes	: 35.0
			1	Tolerance	
Rated speed rpm	: 225	รก	1	cm3/1000 strokes	: 8.0
Approved assessment		, <del>.</del>	1	557 1000 311 0KES	
Aneroid pressure		1000	T		
hPa	: 1	1000	Ť	ACCEMBLY AND AD III	OTMENT DIMENSON
Del. quantity			†	ASSEMBLY AND ADJU	STMENT DIMENSIONS
cm3/1000 strokes	:	1.5	+		
Tolerance			+		
cm3/1000 strokes	:	1.5	+	LDA/	
Check tolerance			+	HBA stroke mm	: 6.1
cm3/1000s.	•	1.5	1	Dimension K mm	: 3,3
	•		1	Tolerance mm	: +-0,1
			1	Dimension KF mm	: 6,6
ELECTR CHUTAES			1	Tolerance mm	
ELECTR. SHUTOFF	LE STOP		I	MS1 dimension mm	
CONTROL LEVER, ID	LE 310P		T		
		-0	†	Tolerance mm	: +0,15/-0,1
Rated speed rpm	: 35	oU .	†		
Del. quantity			+		
cm3/1000 strokes	:	1.5	+		
Tolerance			+	CONTROL LEVER POS	ITION
cm3/1000 strokes	:	1.5	+	SET	
Check tolerance	•	· • •	1	- <del>-</del> ·	
	•	1.5	1		
cm3/1000s.	:	1.0	T		
			+		

Control lever

position YA mm : 37,0..39,0

Control lever

position YB mm : 57,0..68,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.12.92 : ISO 4113 Test oil

: 0 460 414 046 Part no. Pump designation : VE4/11F1500R275

Customer-spec. information : PERKINS Customer Motor : 500 SERIES

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 450 x length mm :

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,5 : +-0,02 Tolerance mm

Check

: +-0,04 tolerance mm

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1100

Setting mm 2.7 Tolerance mm 0.2

Shutoff solenoid

12 Volt

KSB/AFB Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 1100 :

Setting hPa 5.2 Tolerance hPa 0.3 Shutoff solenoid

Volt 12

KSB/AFB Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 1200 Del. quantity

cm3/1000 strokes : 45.5 Tolerance

cm3/1000 strokes : 0.5 Spread

Volt

cm3/1000 strokes : 3.5 Shutoff solenoid 12

KSB/AFB Volt 12

IDLE SETTING

Rated speed rpm 300 Del. quantity

cm3/1000 strokes : 12.0 Tolerance

cm3/1000 strokes 2.0 Shutoff solenoid 12

Volt Spread

cm3/1000 strokes : 3.0

Check tolerance cm3/1000s.

3.0

KSB/AFB Volt 12

ULL-LOAD SPEED R			1 Churate and anaid
	≀EGUL	_ATION	+ Shutoff solenoid + Volt : 12
			+
ated speed rpm el. quantity	:	1550	+ Rated speed rpm : 1500
m3/1000 strokes	:	32.0	SV travel mm : 4.1
olerance	•		+ Tolerance mm : 0.4
m3/1000 strokes	:	5.0	+ Check
hutoff solenoid			tolerance mm : 0.7
olt	:	12	+ Shutoff solenoid
			+ Volt : 12
SB/AFB Volt	:	12	+
			+ KSB/AFB Volt : 12
ARTING FUEL DEL	.IVER	₹Y	ALIDEL V. BUMB. BETSOURE SUAPACTE
	_	100	SUPPLY PUMP PRESSURE CHARACTER
ated speed rpm	:	100	Dotted aread non a 1500
el. quantity n3/1000 strokes		85.0	+ Rated speed rpm : 1500 + Supply pomp
blerance	•	ט.כט	+ pressure bar : 6.7
3/1000 strokes		15.0	+ Tolerance hPa : 0.3
utoff solenoid	•	15.0	+ Shutoff solenoid
olt	•	12	+ Volt : 12
) C C	•	۱۲	I voct : 12
B/AFB Volt	:	12	KSB/AFB Volt : 12
. = •••		-	+
			Rated speed rpm : 700
			+ Supply pomp
			+ pressure bar : 3.8
			Tolerance hPa : 0.3
JECTION-PUMP TE	ST S	SPECIFICATIONS	+ Shutoff solenoid
		2-2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	+ Volt : 12
MING DEVICE CHA	RACT	ERISTIC	+
			KSB/AFB Volt : 12
ted speed rpm	:	1350	<del>}</del>
lerance mm	:	0.4	OVERFLOW QUANTITY
eck			+
lerance mm	:	0.7	Rated speed rpm : 1450
			+ Overflow quantity
utoff solenoid	:	12	+ ccm/10s : 97.2
utoff solenoid	:	12	
utoff solenoid lt	:	12 12	+ ccm/10s : 97.2 + Tolerance + ccm/10s : 41.6
utoff solenoid lt B/AFB Volt	:	12	+ Tolerance + ccm/10s : 41.6
utoff solenoid lt B/AFB Volt	:		Tolerance : 41.6  Check tolerance
utoff solenoid lt B/AFB Volt ted speed rpm	:	12 700	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6
utoff solenoid lt B/AFB Volt ted speed rpm	: : : :	12 700 0.5	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid
utoff solenoid lt B/AFB Volt ted speed rpm travel mm lerance mm	:	12 700	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6
utoff solenoid lt B/AFB Volt ted speed rpm travel mm lerance mm	:	12 700 0.5 0.4	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12
utoff solenoid  B/AFB Volt  ted speed rpm  travel mm lerance mm eck lerance mm	: : : : : : : : : : : : : : : : : : : :	12 700 0.5	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid
utoff solenoid blt B/AFB Volt ted speed rpm travel mm lerance mm eck	:	12 700 0.5 0.4 0.7	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12
utoff solenoid  lt  B/AFB Volt  ted speed rpm  travel mm  lerance mm  eck  lerance mm  utoff solenoid	: : : : : : : : : : : : : : : : : : : :	12 700 0.5 0.4	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 600
utoff solenoid lt  B/AFB Volt  ted speed rpm  travel mm lerance mm eck lerance mm utoff solenoid	: : : : : : : : : : : : : : : : : : : :	12 700 0.5 0.4 0.7	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 600 Overflow quantity
utoff solenoid lt  B/AFB Volt  ted speed rpm  travel mm lerance mm eck lerance mm utoff solenoid	: : : : : : : : : : : : : : : : : : : :	12 700 0.5 0.4 0.7	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 600
utoff solenoid lt  B/AFB Volt  ted speed rpm  travel mm lerance mm eck lerance mm utoff solenoid	: : : : : : : : : : : : : : : : : : : :	12 700 0.5 0.4 0.7 12	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8  Tolerance
utoff solenoid lt  B/AFB Volt  ted speed rpm  travel mm lerance mm eck lerance mm utoff solenoid lt  B/AFB Volt	: : : : : : : : : : : : : : : : : : : :	12 700 0.5 0.4 0.7 12	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8
utoff solenoid  It  B/AFB Volt  ted speed rpm  travel mm lerance mm eck lerance mm utoff solenoid  It  B/AFB Volt  ted speed rpm	: : : : : : : : : : : : : : : : : : : :	12 700 0.5 0.4 0.7 12 12	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s : 22.2
utoff solenoid lt  B/AFB Volt  ted speed rpm  travel mm lerance mm eck lerance mm utoff solenoid lt  B/AFB Volt  ted speed rpm	: : : : : : : : : : : : : : : : : : : :	12 700 0.5 0.4 0.7 12 12 700	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s : 22.2  Check tolerance
utoff solenoid  It  B/AFB Volt  ted speed rpm  travel mm lerance mm eck lerance mm utoff solenoid lt  B/AFB Volt  ted speed rpm  travel mm lerance mm	: : : : : : : : : : : : : : : : : : : :	12 700 0.5 0.4 0.7 12 12	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2
utoff solenoid  lt  B/AFB Volt  ted speed rpm  travel mm  lerance mm  eck lerance mm  utoff solenoid  lt  B/AFB Volt  ted speed rpm  travel mm	: : : : : : : : : : : : : : : : : : : :	12 700 0.5 0.4 0.7 12 12 700	Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s : 22.2  Check tolerance

		+
KSB/AFB Volt	: 12	Rated speed rpm : 600
DELIVERY AND BREA	AKAWAY CHARACTERISTIC	+ Del. quantity + cm3/1000 strokes : 20.5 + Tolerance
Rated speed rpm Del. quantity	: 1550	cm3/1000 strokes : 1.5
cm3/1000 strokes	: 32.0	+ cm3/1000s. : 3.0
Tolerance cm3/1000 strokes Check tolerance	: 5.0	+ Shutoff solenoid + Volt : 12
cm3/1000s. Shutoff solenoid	: 6.0	KSB/AFB Volt : 12
Volt	: 12	Rated speed rpm : 1200 Del. quantity
KSB/AFB Volt	: 12	+ cm3/1000 strokes : 45.5
Rated speed rpm	: 1570	Tolerance cm3/1000 strokes : 0.5
Del. quantity cm3/1000 strokes	: 16.0	- Check tolerance - cm3/1000s. : 2.5
Check tolerance cm3/1000S.	: 10.0	+ Shutoff solenoid + Volt : 12
Shutoff solenoid Volt	: 12	‡
KSB/AFB Volt	: 12	ELECTR. SHUTOFF
Rated speed rpm	: 1630	CONTROL LEVER, IDLE STOP
Del. quantity cm3/1000 strokes	: 1.5	+ Rated speed rpm : 300 + Del. quantity
Tolerance cm3/1000 strokes	: 1.5	cm3/1000 strokes : 1.5 Tolerance
Check tolerance cm3/1000s.	: 1.5	+ cm3/1000 strokes : 1.5 + Check tolerance
Shutoff solenoid Volt	: 12	- cm3/1000s. : 1.5
KSB/AFB Volt	: 12	KSB/AFB Volt : 12
	: 1450	FULL-LOAD STOP CONTROL LEVER
Rated speed rpm Del. quantity		Rated speed rpm : 300
cm3/1000 strokes Tolerance		+ Del. quantity + cm3/1000 strokes : 1.5
cm3/1000 strokes Check tolerance	: 1.5	Tolerance cm3/1000 strokes : 1.5
cm3/1000S. Shutoff solenoid	: 3.0	+ Check tolerance + cm3/1000s. : 1.5
Volt	: 12	+ + KSB/AFB Volt : 12
KSB/AFB Volt	: 12	+ IDLE DELIVERY
Rated speed rpm Del. quantity	: 800	Rated speed rpm : 430
cm3/1000 strokes Tolerance	: 30.0	Del. quantity  cm3/1000 strokes : 1.5
cm3/1000 strokes	: 1.5	† Tolerance
Shutoff solenoid Volt	: 12	+ cm3/1000 strokes : 1.5 Check tolerance
KSB/AFB Volt	: 12	+ cm3/1000s. : 1.5

Shutoff solenoid Volt

12

KSB/AFB Volt

12

Rated speed rpm

350

Del. quantity cm3/1000 strokes :

6.0

Tolerance

cm3/1000 strokes : Check tolerance

3.0

cm3/1000s.

4.5

Shutoff solenoid

Volt

12

KSB/AFB Volt

12

#### START TRANSITION

Rated speed rpm

400

Del. quantity cm3/1000 strokes :

27.0

Tolerance

cm3/1000 strokes :

8.0

Shutoff solenoid

Volt

12

KSB/AFB Volt

12

Rated speed rpm

300

Del. quantity cm3/1000 strokes :

37.0

Tolerance

cm3/1000 strokes

8.0

Shutoff solenoid

Volt

12

KSB/AFB Volt

12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm

Dimension KF mm

: 5,4

Tolerance mm

: +-0,2

MS1 dimension mm : 1,6

Tolerance mm

: +0,15/-0,1

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,0..39,0

Control lever

position YB mm

: 58,7..69,9

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 11.09.95 Edition : ISO 4113 Test oil

: 0 460 424 036 Part no. Pump designation: VE4/12F1400R279

Customer-spec. information Customer : PERKINS : NA 4.40 LKW Motor

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature \*C 45 Tolerance °C

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

har 172 Tolerance bar

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840

**REMARKS** 

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0

Outlet

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 950

2.5 Setting mm Tolerance mm 0.2 Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm : 950

5.7 Setting hPa Tolerance hPa 0.3 Shutoff solenoid Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

800 Rated speed rpm : Del. quantity cm3/1000 strokes : 77.0 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 3.5

Shutoff solenoid

Volt 12

IDLE SETTING

Rated speed rpm 300 Del. quantity cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid Volt 12

Spread cm3/1000 strokes : 3.5

Check tolerance cm3/1000s.3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1600 Del. quantity

cm3/1000 strokes :

24.0

Tolerance

3.0 cm3/1000 strokes :

Shutoff solenoid

12 Volt

STARTING FUEL DEL	IVFRY	+ Tolerance + ccm/10s	•	41.6
		+	·	
Rated speed rpm Del. quantity		+ Check tolerance ccm/10s	:	41.6
cm3/1000 strokes Tolerance		+ Shutoff solenoid + Volt	:	12
cm3/1000 strokes Shutoff solenoid		Rated speed rpm		500
Volt	: 12	+ Overflow quantity + ccm/10s + Tolerance	:	63.8
		ccm/10s	:	22.2
INJECTION-PUMP TE	ST SPECIFICATIONS	Check tolerance	:	22.2
TIMING DEVICE CHA	DACTEDISTIC	+ Shutoff solenoid + Volt	•	12
		+	•	
Rated speed rpm	: 800	+ DELIVERY AND BREA	AKAWA	NY CHARACTERISTIC
SV travel mm Tolerance mm	: 0.8 : 0.3	Rated speed rpm Del. quantity	:	1600
Check tolerance mm	: 0.7	cm3/1000 strokes Tolerance	:	24.0
Shutoff solenoid Volt	: 12	cm3/1000 strokes Check tolerance	:	3.0
Rated speed rpm		+ cm3/1000s. + Shutoff solenoid	:	6.0
		+ Volt	:	12
SV travel mm Tolerance mm	: 3.3 : 0.4	Rated speed rpm	:	1500
Check tolerance mm Shutoff solenoid	: 0.7	Del. quantity cm3/1000 strokes Tolerance	:	57.0
Volt	: 12	cm3/1000 strokes Check tolerance	:	6.0
SUPPLY PUMP PRESS	URE CHARACTERISTIC	cm3/1000s. Shutoff solenoid	:	7.0
Rated speed rpm Supply pomp	: 1400	Volt	:	12
pressure bar	: 7.5 : 0.3	Rated speed rpm	:	1680
Tolerance hPa Shutoff solenoid Volt	: 12	+ Del. quantity + cm3/1000 strokes + Tolerance	:	1.5
Rated speed rpm	: 800	cm3/1000 strokes Check tolerance	:	1.5
Rated speed rpm	: 500	cm3/1000s. Shutoff solenoid	:	1.5
Supply pomp		+ Volt	:	12
pressure bar Tolerance hPa	: 3.7 : 0.3	Rated speed rpm	:	1400
Shutoff solenoid Volt	: 12	+ Del. quantity + cm3/1000 strokes + Tolerance	:	71.5
OVERFLOW QUANTITY		cm3/1000 strokes Check tolerance	:	1.5
Rated speed rpm Overflow quantity	: 1400	- cm3/1000s. - Shutoff solenoid	:	3.0
ccm/10s	: 97.2	Volt	:	12

Dated aread are	: 500	+ Del. quantity + cm3/1000 strokes : 8.5
Rated speed rpm Del. quantity	: 500	- cm3/1000 strokes : 8.5 - Tolerance
cm3/1000 strokes Tolerance	: 68.5	cm3/1000 strokes : 3.5 Check tolerance
cm3/1000 strokes	: 1.5	+ cm3/1000s. : 4.5 + Shutoff solenoid
Check tolerance cm3/1000s. Shutoff solenoid	: 3.0	Volt : 12
Volt	: 12	Rated speed rpm : 350 Del. quantity
Rated speed rpm Del. quantity	: 800	cm3/1000 strokes : 17.5
cm3/1000 strokes Tolerance	: 77.0	cm3/1000 strokes : 3.5 Check tolerance
cm3/1000 strokes	: 0.5	+ cm3/1000s. : 5.0
Check tolerance cm3/1000s.	: 3.0	+ Shutoff solenoid + Volt : 12
Shutoff solenoid Volt	: 12	†
MECHANICAL SHUTOF		<del></del> ‡
		Ŧ
Rated speed rpm Del. quantity		+ START TRANSITION
cm3/1000 strokes Tolerance	: 1.5	+ Rated speed rpm : 250 + Del. quantity
cm3/1000 strokes Check tolerance	: 1.5	cm3/1000 strokes : 50.0 Tolerance
cm3/1000s. Shutoff solenoid	: 1.5	+ cm3/1000 strokes : 15.0 + Shutoff solenoid
Volt	: 12	Volt : 12
ELECTR. SHUTOFF		Rated speed rpm : 150
CONTROL LEVER, ID	LE STOP	Del. quantity cm3/1000 strokes : 115.0
Rated speed rpm Del. quantity	: 300	Tolerance + cm3/1000 strokes : 15.0
cm3/1000 strokes Tolerance	: 1.5	Shutoff solenoid Volt : 12
cm3/1000 strokes Check tolerance	: 1.5	<u> </u>
cm3/1000s.	: 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS
FULL-LOAD STOP CO	NTROL LEVER	Dimension K mm : 3,3 Tolerance mm : +-0,1
Rated speed rpm Del. quantity	: 300	Dimension KF mm : KOT Dimension MS mm : 1,1
cm3/1000 strokes Tolerance	: 1.5	Tolerance mm : +-0,2
cm3/1000 strokes	: 1.5	$\frac{1}{1}$
Check tolerance cm3/1000s.	: 1.5	CONTROL LEVER POSITION
IDLE DELIVERY		+ SET
Rated speed rpm	: 400	Control lever position YA mm : 37,239,2

control lever position YB mm	: 42,751,3	
<del></del>		

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.09.94 : ISO 4113 Test oil

Part no. : 0 460 484 089 Pump designation: VE4/8F2300R317-7

Customer-spec. information Customer : RENAULT : F8Q - 742 Motor Power KW 47.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance \*C 1

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar 3

Test lines : 1 680 750 073

Outside diameter : 6.00

2.00 x inside diameter: 450 x length mm

**REMARKS** 

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 4.3 : Tolerance mm 0.2 : Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm :

Setting hPa 4.8 Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

1250 Rated speed rpm :

Del. quantity cm3/1000 strokes : 31.5 Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5 Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

550 Rated speed rpm Del. quantity

cm3/1000 strokes : 3.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

Rated speed rpm 2450

Del. quantity

cm3/1000 strokes : 26.0

Tolerance

cm3/1000 strokes 3.0

Shutoff solenoid

Volt 12

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes : 15.0

Shutoff solenoid Volt	:	12	†	Rated speed rpm	:	310
			Ī	SV travel mm Tolerance mm	:	1.8 1.2
LOAD-DEPENDENT ST SETTING	TART	OF DELIVERY	+	Check tolerance mm	:	1.2
DELIVERY DIFFEREN	VCE		‡	Shutoff solenoid Volt	:	12
Rated speed rpm Del. quantity	:	1250	İ	KSB/AFB Volt	:	12
cm3/1000 strokes Tolerance	:	-8.7	1	Rated speed rpm	:	500
cm3/1000 strokes Shutoff solenoid	:	1.0	<u> </u>	SV travel mm Tolerance mm	:	3.1 1.2
Volt	:	12	‡	Check tolerance mm	:	1.2
PRESSURE DIFFEREN			‡	Shutoff solenoid Volt	:	12
Rated speed rpm Del. quantity		1250	‡	KSB/AFB Volt	:	12
cm3/1000 strokes Tolerance cm3/1000 strokes		-0.2 0.1	‡	SUPPLY PUMP PRESS	URE	CHARACTERISTIC
Shutoff solenoid Volt	•	12	Ī	Rated speed rpm Supply pomp	:	2000
TIMING-DEVICE TRA	VEL		+	pressure bar Tolerance hPa	:	6.7 0.3
Rated speed rpm	:	1250	+	Shutoff solenoid Volt	:	12
Del. quantity cm3/1000 strokes	:	-0.4	‡	Rated speed rpm	:	750
Tolerance cm3/1000 strokes Shutoff solenoid	:	0.1	Ī	Supply pomp pressure bar Tolerance hPa	:	3.4 0.3
Volt	:	12	<u> </u>	Shutoff solenoid	•	12
INJECTION-PUMP TE	ST S	SPECIFICATIONS	}	OVERFLOW QUANTITY	•	, ,
TIMING DEVICE CHA	RACT	ERISTIC	+		:	2250
Rated speed rpm	:	2000	‡	Overflow quantity ccm/10s Tolerance	:	97.2
SV travel mm Tolerance mm	:	8.0 0.4	<u> </u>	ccm/10s	:	41.6
Check tolerance mm	:	0.7	+	Check tolerance ccm/10s	÷	41.6
Shutoff solenoid Volt	:	12	+	Shutoff solenoid Volt	:	12
Rated speed rpm	:	750	‡	Rated speed rpm	;	750
SV travel mm	:	2.0 0.4	‡	Overflow quantity ccm/10s Tolerance	:	63.8
Tolerance mm Check tolerance mm	•	0.7	Ī	ccm/10s	:	22.2
Shutoff solenoid Volt	:	12	1	Check tolerance ccm/10s	:	22.2
•			•			

J05

Shutoff solenoid Volt	: \12	+	Shutoff solenoid Volt	:	12	
DELIVERY AND BREA	AKAWAY CHARACT	ERISTIC T	Rated speed rpm Del. quantity	:	750	
Rated speed rpm Del. quantity	: 2450	+	cm3/1000 strokes Tolerance	:	31.6	
cm3/1000 strokes	: 26.0	Ŧ	cm3/1000 strokes Check tolerance	:	1.5	
Tolerance cm3/1000 strokes Check tolerance	: 3.0	Ŧ	cm3/1000s. Shutoff solenoid		2.3	
cm3/1000s. Shutoff solenoid		$\frac{1}{1}$	Volt	:	12	
Volt	: 12	1	Rated speed rpm Del. quantity	:	1250	
Rated speed rpm Del. quantity	: 2650	1	cm3/1000 strokes Tolerance	:	31.5	
cm3/1000 strokes Check tolerance	: 11.0	1	cm3/1000 strokes Check tolerance		0.5	
cm3/1000s. Shutoff solenoid		1	cm3/1000s. Shutoff solenoid	:	2.3	
Volt	: 12	‡	Volt	:	12	
Rated speed rpm Del. quantity		‡				
cm3/1000 strokes Tolerance		‡	ELECTR. SHUTOFF CONTROL LEVER, ID	LE ST	ГОР	
cm3/1000 strokes Check tolerance		‡	Rated speed rpm	:	410	
cm3/1000s. Shutoff solenoid		‡	Del. quantity cm3/1000 strokes	:	1.5	
Volt	: 12	‡	Tolerance cm3/1000 strokes		1.5	
Rated speed rpm Del. quantity		‡	Check tolerance cm3/1000s.		1.5	
cm3/1000 strokes Tolerance		‡	Spread cm3/1000 strokes	:	5.0	
cm3/1000 strokes Check tolerance cm3/1000s.		Ŧ	FULL-LOAD STOP CO	NTROL	. LEVER	
Shutoff solenoid Volt	: 2.3 : 12	$\pm$	Rated speed rpm Del. quantity	:	410	
Rated speed rpm	: 1625	1	cm3/1000 strokes Tolerance	:	1.5	
Del. quantity cm3/1000 strokes		+	cm3/1000 strokes Spread	:	1.5	
Tolerance cm3/1000 strokes		+	cm3/1000 strokes Check tolerance	:	5.0	
Check tolerance cm3/1000s.	: 2.3	‡	cm3/1000s. Spread	:	1.5	
Shutoff solenoid Volt	: 12	‡	cm3/1000 strokes	:	5.0	
Rated speed rpm	: 2000	†				
Del. quantity cm3/1000 strokes	: 31.3	<del> </del>				
Tolerance cm3/1000 strokes Check tolerance	: 1.0	Ī	CHECKING LOAD-DEP START OF DELIVERY		T	
cm3/1000s.	: 2.3	Ŧ	STANT OF PECTVER!			

DFL	TVF	RY	DIF	FFR	<b>ENCE</b>
~		-'''	~		

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-11.0
Tolerance cm3/1000 strokes	•	2.0
Check tolerance	•	
cm3/1000s. Shutoff solenoid	:	2.0
Volt	:	12

#### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-0.4
Tolerance cm3/1000 strokes	:	0.1
Check tolerance cm3/1000s.	:	0.1
Shutoff solenoid Volt	:	12

## DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	5.0
Tolerance cm3/1000 strokes	•	3.0
Check tolerance	•	3.0
cm3/1000s.	:	3.0
Shutoff solenoid	:	12

# PRESSURE DIFFERENCE

Rated speed rpm	:	1250
Supply pomp		
pressure bar	:	-0.4
Tolerance hPa	;	0.2
Shutoff solenoid		
Volt	:	12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Tolerance mm	:	0.2
Check		
tolerance mm	:	0.3
Shutoff solenoid		40
Volt	:	72

# START TRANSITION

Rated speed rpm	:	310	J
-----------------	---	-----	---

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	:	30.0 15.0
Rated speed rpm	:	210

Del. quantity	•	
cm3/1000 strokes	:	60.0
Tolerance		
cm3/1000 strokes	:	15.0
Shutoff solenoid		
Volt	:	12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	Kmm	: 3,3
Tolerance	mm	: +-0,1
Dimension	KF mm	: 5,5
Tolerance	mm	: +-0,2
Dimension	MS mm	: 1,3
Tolerance	mm	: +-0,2

MICROS	WI٦	ГСН
SET		

mm	: 0,83,0
	: 7,68,4

# CONTROL LEVER POSITION SET

Control lev	er		
position YA	mm	:	

Control lever position YB mm : -

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.07.95 Test oil : ISO 4113

Part no. : 0 460 484 090 Pump designation : VE4/8F2300R317-8

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 724
Power KW : 47.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45
Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 4.3 Tolerance mm : 0.2 Shutoff solenoid Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 4.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm3/1000 strokes : 26.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

#### STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

oh. w. ee					
Shutoff solenoid Volt	: 12	<u> </u>	Rated speed rpm	:	310
		1	SV travel mm Tolerance mm	:	1.8 1.2
LOAD-DEPENDENT ST SETTING	ART OF DELIVERY	+	Check tolerance mm	:	1.2
DELIVERY DIFFEREN	ICE	‡	Shutoff solenoid Volt	:	12
Rated speed rpm Del. quantity	: 1250	‡	KSB/AFB Volt	:	12
cm3/1000 strokes Tolerance	: -8.7	Ī	Rated speed rpm	:	500
cm3/1000 strokes Shutoff solenoid	: 1.0	+	SV travel mm Tolerance mm	: :	3.1 1.2
Volt	: 12	‡	Check tolerance mm	:	1.2
PRESSURE DIFFEREN		‡	Shutoff solenoid Volt	:	12
Rated speed rpm Del. quantity cm3/1000 strokes		‡	KSB/AFB Volt	:	12
Tolerance cm3/1000 strokes		Ī	SUPPLY PUMP PRESS	URE	CHARACTERISTIC
Shutoff solenoid Volt	: 12	‡	Rated speed rpm Supply pomp	:	2000
TIMING-DEVICE TRA	VEL DIFFERENCE	‡	pressure bar Tolerance hPa	:	6.7 0.3
Rated speed rpm	: 1250	†	Shutoff solenoid Volt	:	12
Del. quantity cm3/1000 strokes Tolerance	: -0.4	Ī	Rated speed rpm Supply pomp	:	750
cm3/1000 strokes Shutoff solenoid	: 0.1	1	pressure bar Tolerance hPa	:	3.4 0.3
Volt	: 12	+	Shutoff solenoid Volt	:	12
INJECTION-PUMP TE	ST SPECIFICATION	vs +	OVERFLOW QUANTITY		
TIMING DEVICE CHA	RACTERISTIC	1	Rated speed rpm Overflow quantity	:	2250
Rated speed rpm	: 2000	+	ccm/10s Tolerance	:	97.2
SV travel mm Tolerance mm	: 8.0 : 0.4	‡	ccm/10s	:	41.6
Check tolerance mm	: 0.7	+	Check tolerance ccm/10s	:	41.6
Shutoff solenoid Volt	: 12	1	Shutoff solenoid Volt	:	12
Rated speed rpm	: 750	Ī	Rated speed rpm Overflow quantity	:	750
SV travel mm Tolerance mm	: 2.0 : 0.4	‡	ccm/10s Tolerance	:	63.8
Check tolerance mm	: 0.7	‡	ccm/10s	:	22.2
Shutoff solenoid Volt	: 12	‡	Check tolerance ccm/10s	:	22.2

Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt : 12
DELIVERY AND BREA	AKAWAY CHARACTERISTIC	Rated speed rpm : 750  Del. quantity
Rated speed rpm Del. quantity	: 2450	cm3/1000 strokes : 31.6 Tolerance
cm3/1000 strokes Tolerance	: 26.0	cm3/1000 strokes : 1.5 Check tolerance
cm3/1000 strokes	: 3.0	+ cm3/1000s. : 2.3
Check tolerance cm3/1000S. Shutoff solenoid	: 4.0	+ Shutoff solenoid + Volt : 12
Volt	: 12	Rated speed rpm : 1250 Del. quantity
Rated speed rpm Del. quantity	: 2650	cm3/1000 strokes : 31.5  Tolerance
cm3/1000 strokes Check tolerance	: 11.0	cm3/1000 strokes : 0.5 Check tolerance
cm3/1000s. Shutoff solenoid	: 5.0	cm3/1000s. : 2.3  Shutoff solenoid
Volt	: 12	Volt : 12
Rated speed rpm Del. quantity	: 2950	
cm3/1000 strokes Tolerance	: 2.5	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
cm3/1000 strokes Check tolerance		Rated speed rpm : 410
cm3/1000s. Shutoff solenoid	: 2.5	Del. quantity  cm3/1000 strokes : 1.5
Volt	: 12	+ Tolerance + cm3/1000 strokes : 1.5
Rated speed rpm Del. quantity	: 2250	Check tolerance - cm3/1000s. : 1.5
cm3/1000 strokes Tolerance	: 32.5	Spread
cm3/1000 strokes Check tolerance	: 1.0	FULL-LOAD STOP CONTROL LEVER
cm3/1000s. Shutoff solenoid	: 2.3	Rated speed rpm : 410
Volt	: 12	Del. quantity  cm3/1000 strokes : 1.5
Rated speed rpm Del. quantity	: 1625	Tolerance cm3/1000 strokes : 1.5
cm3/1000 strokes Tolerance	: 31.2	Spread - cm3/1000 strokes : 5.0
cm3/1000 strokes Check tolerance	: 1.5	Check tolerance cm3/1000s. : 1.5
cm3/1000s. Shutoff solenoid	: 2.3	Spread - cm3/1000 strokes : 5.0
Volt	: 12	T CHIST TOOL SCHOKES: 3.0
Rated speed rpm Del. quantity	: 2000	
cm3/1000 strokes Tolerance	: 31.3	
cm3/1000 strokes Check tolerance	: 1.0	CHECKING LOAD-DEPENDENT START OF DELIVERY
cm3/1000s.	: 2.3	T START OF DELIVER

#### DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -11.0
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000s. : 2.0
Shutoff solenoid
Volt : 12

#### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.4
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000s. : 0.1
Shutoff solenoid
Volt : 12

#### DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000s. : 3.0
Shutoff solenoid
Volt : 12

#### PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pomp
pressure bar : -0.4
Tolerance hPa : 0.2
Shutoff solenoid
Volt : 12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Voit : 12

### START TRANSITION

Rated speed rpm : 310

Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : 15.0 Shutoff solenoid

Rated speed rpm : 210 Del. quantity

Volt

cm3/1000 strokes : 60.0 Tolerance

cm3/1000 strokes : 15.0 Shutoff solenoid

Volt : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,5
Tolerance mm : +-0,2
Dimension MS mm : 1,3
Tolerance mm : +-0,2

MICROSWITCH SET

mm : C

: 0,8...3,0 : 7,6...8,4

12

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 16.03.95 Edition : ISO 4113 Test oil : 0 460 484 031 Part no. Pump designation : VE4/8F2100R357 Customer-spec. information Customer : VW : 028.A 1.9L, 45KW Motor TEST BENCH REQUIREMENTS Calibrating-oil return temperature °C 45 Tolerance °C Overflow restriction mm 0.55 0.35 Inlet press. bar Tolerance bar 0.05 Test nozzle holde assembly : 1 688 901 000 Opening pressure 147 bar Tolerance bar 3 : 1 680 750 000 Test lines 6.00 Outside diameter : 2.00 x inside diameter : 840 x length mm **REMARKS** INJECTION PUMP SETTING VALUES

Setting mm 3.7 Tolerance mm 0.2 Shutoff solenoid Volt 12 SUPPLY PUMP PRESSURE Rated speed rpm : 1250 Setting hPa 6.0 Tolerance hPa 0.3 Shutoff solenoid Volt 12 FULL-LOAD DELIV. WITHOUT BOOST PRESSURE : 1250 Rated speed rpm Del. quantity cm3/1000 strokes : 36.0 Tolerance cm3/1000 strokes : 0.5Spread cm3/1000 strokes : 2.0 Shutoff solenoid Volt 12 HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING Rated speed rpm 550 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 strokes 0.5 Shutoff solenoid Volt 12 FULL-LOAD SPEED REGULATION 2400 Rated speed rpm Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Shutoff solenoid 12 Volt STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 strokes 25.0 Shutoff solenoid 12 Volt

Rated speed rpm :

1250

TIMING DEVICE TRAVEL

			ı				
			Ī	SUPPLY PUMP PRESS	URE	CHARACTER	ISTIC
LOAD-DEPENDENT ST SETTING	ART C	OF DELIVERY	Ī	Rated speed rpm Supply pomp	:	1850	
			1	pressure bar	•	7.4	
DELIVERY DIFFEREN	ICE		1	Tolerance hPa	:	0.3	
DECIVER DIFFEREN			1	Shutoff solenoid	•	0.5	
Rated speed rpm	:	1250	Ŧ	Volt	:	12	
Del. quantity cm3/1000 strokes Tolerance	:	<del>-</del> 7.5	Ŧ	Rated speed rpm	:	750	
cm3/1000 strokes	:	1.0	Ŧ	Supply pomp pressure bar	:	4.8	
Shutoff solenoid Volt	•	12	‡	Tolerance hPa Shutoff solenoid	:	0.3	
	•	1.2	+	Volt	:	12	
PRESSURE DIFFEREN	CE		†				
Rated speed rpm	•	1250	1	OVERFLOW QUANTITY			
Del. quantity	•	1250	$\mathbf{I}$	Rated speed rpm		1850	
cm3/1000 strokes		-0.2	T			טכסו	
	•	70.2	Ť	Overflow quantity		07.3	
Tolerance		0.4	†	ccm/10s	:	97.2	
cm3/1000 strokes	:	0.1	+	Tolerance			
Shutoff solenoid			<del>†</del>	ccm/10s	:	41.6	
Volt	:	12	+				
			+	Check tolerance			
TIMING-DEVICE TRA	VEL D	IFFERENCE	+	ccm/10s	:	55.5	
			+	Shutoff solenoid			
Rated speed rpm	:	1250	+	Volt	:	12	
Del. quantity			+				
cm3/1000 strokes	:	-0.4	†	Rated speed rpm Overflow quantity		750	
Tolerance		0.1	T	ccm/10s		63.8	
cm3/1000 strokes	:	U. 1	<b>T</b>		:	03.8	
Shutoff solenoid			†	Tolerance			
Volt	:	12	1	ccm/10s	:	22.2	
			\	Check tolerance			
INJECTION-PUMP TE	CT CD	ECTETCATTONS	1	ccm/10s		34.7	
TIADECTION TOWN TE	01 36	CCTI TCAI TONS	T	Shutoff solenoid	•	54.1	
TIMING DEVICE CHA	04075	חדפדור	T	Volt		12	
ITHING DEVICE CHA	KALIE	KISTIC	Ī	VOCE	•	1.2	
Rated speed rpm	:	1700	1	DELIVERY AND BREA	KAWA	Y CHARACT	ERISTIC
SV travel mm	:	4.8	+	Rated speed rpm	:	2400	
Tolerance mm	:	0.4	+	Del. quantity			
Check			+	cm3/1000 strokes	:	12.0	
tolerance mm	:	0.7	+	Tolerance			
Shutoff solenoid			1	cm3/1000 strokes	:	2.0	
Volt	:	12	<u>†</u>	Check tolerance			
	•	. –	1	cm3/1000s.	•	4.0	
Rated speed rpm	:	750	1	Shutoff solenoid	•	1.0	
waren sheen chii	•	. ) .	${ m I}$	Voit		12	
Cil traval m		1.3	T	VOCE	•	i C.	
SV travel mm	•		T	Dotad assad		2450	
Tolerance mm	:	0.4	†	Rated speed rpm	•	2650	
Check			†	Del. quantity		7.0	
tolerance mm	:	0.7	†	cm3/1000 strokes	:	3.0	
Shutoff solenoid			+	Check tolerance			
Volt	:	12	+	cm3/1000s.	:	3.0	
		===	†	Shutoff solenoid		4.0	
Rated speed rpm	:	750	+	Volt	:	12	

ated speed rpm	:	2250	‡	Tolerance cm3/1000 strokes	:	1.5
l. quantity 3/1000 strokes	:	23.0	<u> </u>	Check tolerance cm3/1000s.	:	1.5
lerance 3/1000 strokes		5.0	†	FULL-LOAD STOP CO		
ck tolerance	•		Ŧ			
1000s. coff solenoid	:	6.0	‡	Rated speed rpm Del. quantity		
t	:	12	‡	cm3/1000 strokes Tolerance	:	1.5
ed speed rpm quantity	:	1850	1	cm3/1000 strokes Check tolerance	:	1.5
/1000 strokes	:	33.0	+	cm3/1000s.	:	1.5
/1000 strokes	:	1.0	Ŧ			
ck tolerance /1000s.	:	2.2	‡			
off solenoid	:	12	‡	RESIDUAL QUANTITY	,	
ed speed rpm	:	500	‡	Rated speed rpm Del. quantity	:	500
. quantity /1000 strokes		32.0	1	cm3/1000 strokes Tolerance	:	3.5
erance /1000 strokes		2.5	<u> </u>	cm3/1000 strokes Check tolerance		1.0
ck tolerance			Ŧ	cm3/1000s.	:	2.5
/1000s. toff solenoid	:	5.0	‡	Shutoff solenoid Volt	:	12
:	:	12	‡			
d speed rpm quantity	:	750	‡	CHECKING LOAD-DEF	END	ENT
1000 strokes	:	32.0	1	START OF DELIVERY		
1000 strokes	:	1.5	Ŧ	DELIVERY DIFFEREN	CE	
k tolerance 1000s.	:	3.0	‡	Rated speed rpm	:	1250
toff solenoid t	:	12	‡	Del. quantity cm3/1000 strokes	:	-8.0
ed speed rpm	:	1250	‡	Tolerance cm3/1000 strokes		
quantity 1000 strokes			1	Check tolerance cm3/1000s.	•	4.0
rance			Ŧ	Shutoff solenoid	•	
1000 strokes k tolerance		0.5	‡	Volt	:	12
1000s. off solenoid	:	2.2	‡	TIMING-DEVICE TRA	VEL	DIFFERENCE
	:	12	<u> </u>	Rated speed rpm Del. quantity	:	1250
				cm3/1000 strokes Tolerance	:	-0.4
TR. SHUTOFF		TOD	Ŧ	cm3/1000 strokes	:	0.1
ROL LEVER, IDI			‡	Check tolerance cm3/1000s.	:	0.1
ed speed rpm	:	425	‡	Shutoff solenoid Volt	:	12
. quantity						

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pomp
pressure bar : -0.7
Tolerance hPa : 0.2
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250

SV travel mm : -1.2

Tolerance mm : 0.2

Check
tolerance mm : 0.5

12

10.0

Shutoff solenoid Volt :

,

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm3/1000 strokes : 28.0
Tolerance

cm3/1000 strokes :

Shutoff solenoid Volt : 12

Rated speed rpm : 180

Del. quantity cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,3
Tolerance mm : +-0,2
Dimension MS mm : 1,3
Tolerance mm : +-0,2

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 20,0..22,0

Control lever

position YB mm : 60,5..71,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 06.06.95

Test oil

: ISO 4113

Part no.

: 0 460 484 102

Pump designation : VE4/8F2100R357-1

Customer-spec. information

Customer

: VW

Motor Power KW : 1.91 T4 SD

45.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C

45

Tolerance °C

Overflow

restriction mm

0.55

Inlet press. bar :

0.35

Tolerance bar

0.05

Test nozzle holde

assembly

: 1 688 901 000

Opening pressure

bar

147

Tolerance bar

Test lines

: 1 680 750 000

Outside diameter :

6.00

x inside diameter :

2.00

x length mm

840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm

1250

Setting mm

3.7 :

Tolerance mm

0.2

Shutoff solenoid

Volt

12

SUPPLY PUMP PRESSURE

Rated speed rpm

1250

Setting hPa

6.0

Tolerance hPa

0.3

Shutoff solenoid

Volt

12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

:

Rated speed rpm

1250

Del. quantity

cm3/1000 strokes : 36.0

Tolerance

cm3/1000 strokes :

0.5

Spread

cm3/1000 strokes :

2.0

Shutoff solenoid Volt

12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm

550

Del. quantity

cm3/1000 strokes :

2.5

Tolerance

cm3/1000 strokes :

0.5

Shutoff solenoid

Volt

12

FULL-LOAD SPEED REGULATION

Rated speed rpm

2400

Del. quantity

cm3/1000 strokes :

12.0

Tolerance

cm3/1000 strokes

2.0

Shutoff solenoid

Volt

12

STARTING FUEL DELIVERY

Rated speed rpm

100

Del. quantity

cm3/1000 strokes :

60.0

Tolerance

cm3/1000 strokes :

25.0

Shutoff solenoid			1			
Volt	:	12	+	Rated speed rpm	:	750
			Ŧ	SUPPLY PUMP PRESS	URE	CHARACTERISTIC
LOAD-DEPENDENT ST	ART	OF DELIVERY	Ī	Rated speed rpm Supply pomp	:	1850
			+	pressure bar	:	7.4
DELIVERY DIFFEREN	ICE		‡	Tolerance hPa Shutoff solenoid	:	0.3
Rated speed rpm Del. quantity	:	1250	+	Volt	:	12
cm3/1000 strokes Tolerance	:	<b>-7.</b> 5	‡	Rated speed rpm Supply pomp	:	750
cm3/1000 strokes	:	1.0	+	pressure bar	:	4.8
Shutoff solenoid Volt	:	12	‡	Tolerance hPa Shutoff solenoid	:	0.3
DDECOUDE D7:55DE	105		+	Volt	:	12
PRESSURE DIFFEREN	ICE		Ī	OVERFLOW QUANTITY		
Rated speed rpm	:	1250	+	Dated aread non		1850
Del. quantity cm3/1000 strokes	:	-0.2	Ī	Rated speed rpm Overflow quantity	:	UC01
Tolerance cm3/1000 strokes		0.1	†	ccm/10s Tolerance	:	97.2
Shutoff solenoid	•		Į	ccm/10s	:	41.6
Volt	:	12	İ	Check tolerance		
TIMING-DEVICE TRA	VEL	DIFFERENCE	1	ccm/10s Shutoff solenoid	:	55.5
Rated speed rpm Del. quantity	:	1250	+	Volt	:	12
cm3/1000 strokes Tolerance	:	-0.4	+	Rated speed rpm Overflow quantity	:	750
cm3/1000 strokes Shutoff solenoid	:	0.1	1	ccm/10s Tolerance	:	63.8
Volt	:	12	$\frac{1}{1}$	ccm/10s	:	22.2
		<del></del>	- +	Check tolerance		
INJECTION-PUMP TE	ST	SPECIFICATIONS	‡	ccm/10s Shutoff solenoid	:	34.7
TIMING DEVICE CHA	RAC	TERISTIC	1	Volt	:	12
Rated speed rpm	:	1700	-	DELIVERY AND BREA	KAWA	AY CHARACTERISTIC
SV travel mm Tolerance mm	:	4.8 0.4	Ì	Rated speed rpm Del. quantity	:	2400
Check	•		<del>-</del>	cm3/1000 strokes	:	12.0
tolerance mm Shutoff solenoid	:	0.7	‡	Tolerance cm3/1000 strokes	:	2.0
Volt	:	12	+	Check tolerance		
Rated speed rpm	:	750	‡	cm3/1000S. Shutoff solenoid	:	4.0
		1.3	+	Volt	:	12
SV travel mm Tolerance mm	:	0.4	Ţ	Rated speed rpm	:	2650
Check tolerance mm	:	0.7	‡	Del. quantity cm3/1000 strokes	:	3.0
Shutoff solenoid Volt	:	12	‡	Check tolerance cm3/1000s.	:	3.0

			1
Shutoff solenoid Volt		12	+ Del. quantity + cm3/1000 strokes : 1.5
VOCE	•	12	Tolerance
Rated speed rpm	:	2250	cm3/1000 strokes : 1.5
Del. quantity	•	2230	Check tolerance
cm3/1000 strokes	:	23.0	+ cm3/1000s. : 1.5
Tolerance	•		Spread
cm3/1000 strokes	:	5.0	+ cm3/1000 strokes : 5.0
Check tolerance			+
cm3/1000s.	:	6.0	+ FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid			+
Volt	:	12	+ Rated speed rpm : 425
<b>5</b> • • • • • • • • • • • • • • • • • • •		4050	+ Del. quantity
Rated speed rpm	:	1850	+ cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes		33.0	+ Tolerance + cm3/1000 strokes : 1.5
Tolerance	٠	22.0	Spread
cm3/1000 strokes		1.0	- spread - cm3/1000 strokes : 5.0
Check tolerance	•		+ Check tolerance
cm3/1000s.	:	2.2	+ cm3/1000s. : 1.5
Shutoff solenoid	•		Spread
Volt	:	12	+ cm3/1000 strokes : 5.0
			+
Rated speed rpm	:	500	†
Del. quantity		70.0	†
cm3/1000 strokes	:	32.0	DECEMBER OF STATE OF
Tolerance		2 -	+ RESIDUAL QUANTITY
cm3/1000 strokes	:	2.5	+ Rated speed rpm : 500
Check tolerance cm3/1000s.		5.0	+ Rated speed rpm : 500 + Del. quantity
Shutoff solenoid	:	٥.٠	+ cm3/1000 strokes : 3.5
Volt	:	12	+ Tolerance
VOCC	•		+ cm3/1000 strokes : 1.0
Rated speed rpm	:	750	+ Check tolerance
Del. quantity			+ cm3/1000s. : 2.5
cm3/1000 strokes	:	32.0	+ Shutoff solenoid
Tolerance			+ Volt : 12
cm3/1000 strokes	:	1.5	+
Check tolerance		7.0	+
cm3/1000s.	:	3.0	CHECKTAIC LOAD DECEMBENT
Shutoff solenoid		12	+ CHECKING LOAD-DEPENDENT
Volt	•	12	START OF DELIVERY
Rated speed rpm	:	1250	T DELIVERY DIFFERENCE
Del. quantity	•		
cm3/1000 strokes	:	36.0	Rated speed rpm : 1250
Tolerance			+ Del. quantity
cm3/1000 strokes	:	0.5	+ cm3/1000 strokes : −8.0
Check tolerance			+ Tolerance
cm3/1000s.	:	2.2	+ cm3/1000 strokes : 3.0
Shutoff solenoid		40	+ Check tolerance
Volt	:	12	+ cm3/1000S. : 4.0 + Shutoff solenoid
			+ Volt : 12
ELECTR. SHUTOFF			TIMING-DEVICE TRAVEL DIFFERENCE
CONTROL LEVER, IDL	_E S	STOP	+
			Rated speed rpm : 1250
Rated speed rpm	:	425	+ Del. quantity
			+ cm3/1000 strokes : $-0.4$

Tolerance cm3/1000 strokes	:	0.1
Check tolerance		
cm3/1000s. Shutoff solenoid	:	0.1
Volt	:	12
DELIVERY DIFFEREN	ICE	
Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	1.5
Tolerance cm3/1000 strokes	:	1.5
Check tolerance cm3/1000s.	:	1.5
Shutoff solenoid Volt	:	12
PRESSURE DIFFEREN		
Rated speed rpm	:	1250
Supply pomp pressure bar		
Tolerance hPa	:	-0.7 0.2
Shutoff solenoid Volt	:	12
TIMING-DEVICE TRA	VEI	DIFFERENCE
LINING DEALCE LYN	۷ ب	DITTENENCE
Rated speed rpm	:	1250
Rated speed rpm SV travel mm	:	1250
Rated speed rpm	:	
Rated speed rpm  SV travel mm  Tolerance mm  Check tolerance mm	:	1250
Rated speed rpm  SV travel mm  Tolerance mm  Check	:	1250 -1.2 0.2
Rated speed rpm  SV travel mm  Tolerance mm  Check tolerance mm  Shutoff solenoid	:	1250 -1.2 0.2 0.5
Rated speed rpm  SV travel mm  Tolerance mm  Check tolerance mm  Shutoff solenoid	:	1250 -1.2 0.2 0.5
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  START TRANSITION Rated speed rpm	:	1250 -1.2 0.2 0.5
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes	:	1250 -1.2 0.2 0.5 12
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : :	1250 -1.2 0.2 0.5 12
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	1250 -1.2 0.2 0.5 12 380 28.0
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	1250 -1.2 0.2 0.5 12 380 28.0 10.0 12
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	1250 -1.2 0.2 0.5 12 380 28.0 10.0
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes		1250 -1.2 0.2 0.5 12 380 28.0 10.0 12
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes		1250 -1.2 0.2 0.5 12 380 28.0 10.0 12
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance		1250 -1.2 0.2 0.5 12 380 28.0 10.0 12 180 60.0

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,3
Tolerance mm : +-0,2
Dimension MS mm : 1,3
Tolerance mm : +-0,2

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 20,0..22,0

Control lever

position YB mm : 60,5..71,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 19.06.95

Test oil

: ISO 4113

Part no.

: 0 460 426 167 Pump designation: VE6/12F1000R369-1

Customer-spec. information Customer

: CDC

Motor

: 6BT- 5.9 IND.

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm

0.55

Inlet press. bar :

0.35

Tolerance bar

0.05

Test nozzle holde

assembly

: 1 688 901 027

Opening pressure

bar

250

Tolerance bar

3

Test lines

: 1 680 750 000

Outside diameter :

6.00

x inside diemeter :

2.00

x length mm

840

**REMARKS** 

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,5 Tolerance mm : +-0,02

: D

Outlet

Prestroke

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 750

3.7 Setting mm Tolerance mm 0.2 :

Shutoff solenoid

24 Volt

SUPPLY PUMP PRESSURE

750 Rated speed rpm

Setting hPa 3.9 Tolerance hPa 0.3

Shutoff solenoid

Volt 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

900 Rated speed rpm

Del. quantity

cm3/1000 strokes : 74.9

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0

Shutoff solenoid

24 Volt

IDLE SETTING

Rated speed rpm 500

Del. quantity cm3/1000 strokes :

7.0

Tolerance

cm3/1000 strokes 3.0

Shutoff solenoid

24

Volt Spread

cm3/1000 strokes :

cm3/1000s.

Check tolerance

5.5 7.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1045				1				
cm3/1000 strokes : 63.0         Asted speed rpm : 1000           Tolerance cm3/1000 strokes : 3.0         ccm/10s : 97.2           Shutoff solenoid Volt : 24         ccm/10s : 41.6           STARTING FUEL DELIVERY         Check tolerance ccm/10s : 41.6           Rated speed rpm : 100         Shutoff solenoid Volt : 24           Rated speed rpm : 100.0 strokes : 100.0 strokes : 30.0 strokes : 30.0 strokes : 24         Rated speed rpm : 500 strokes : 63.8 strolerance ccm/10s : 22.2           INJECTION-PUMP TEST SPECIFICATIONS         Check tolerance ccm/10s : 22.2           INJECTION-PUMP TEST SPECIFICATIONS         Shutoff solenoid Volt : 24           SV travel mm : 5.2 classed rpm : 1000         Rated speed rpm : 1045 bel. quantity cm3/1000 strokes : 63.0 rolerance mm : 0.4 classed rpm : 1045 bel. quantity cm3/1000 strokes : 63.0 rolerance rpm : 1045 bel. quantity cm3/1000 strokes : 63.0 rolerance rpm : 0.7 clerance rpm : 0.7 check tolerance cm3/1000 strokes : 33.0 check tolerance cm3/1000 strokes : 33.0 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 1.5 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 1.5 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 1.5 check tolerance cm3/1000 strokes : 35.0 check tolerance cm3/1000 strokes : 1.5 check tolerance cm3/1000 strokes : 1.5 check tolerance cm3/1000 strokes : 1.5 check tolerance cm3/1000 strokes : 1.5 c		:	1045	-	OVERFLOW QUANTITY	•		
cm3/1000 strokes : 3.0         ccm/10s : 97.2           Shutoff solenoid Volt : 24         Check tolerance ccm/10s : 41.6           STARTING FUEL DELIVERY         Check tolerance ccm/10s : 41.6           Rated speed rpm : 100 bel, quantity com3/1000 strokes : 100.0         Rated speed rpm : 500 coverflow quantity ccm/10s com/10s : 63.8           FOLERANCE CHARACTERISTIC Comm/10s in June 10st page 11st page 10st page 10st page 11s	cm3/1000 strokes	:	63.0	<u>†</u>			1000	
Volt	cm3/1000 strokes		3.0	Ì	ccm/10s	:	97.2	
Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 strokes : 30.0  NINECTION-PUMP TEST SPECIFICATIONS  INJECT		:	24	1		:	41.6	
Rated speed rpm : 100	STARTING FUEL DEL	.IVEF	RY	Ŧ			11 4	
cm3/1000 strokes : 100.0       100.0         Tolerance cm3/1000 strokes : 30.0       30.0         Cm3/1000 strokes : 30.0       0 verflow quantity ccm/10s : 63.8         Shutoff solenoid volt : 24       100 ccm/10s : 22.2         INJECTION-PUMP TEST SPECIFICATIONS       10 ccm/10s : 22.2         TIMING DEVICE CHARACTERISTIC       DELIVERY AND BREAKAWAY CHARACTERISTIC         Rated speed rpm : 1000       Rated speed rpm : 1045 bel. quantity         SV travel mm : 5.2 cm3/1000 strokes : 63.0       10 clerance cm3/1000 strokes : 3.0         Tolerance mm : 0.4 clerance mm : 0.4 clerance cm3/1000 strokes : 3.0       10 clerance cm3/1000 strokes : 3.0         Shutoff solenoid volt : 24       8 shutoff solenoid volt : 24         SV travel mm : 1.8 clerance mm : 0.4 clerance cm : 0.4 cm3/1000 strokes : 35.0 clerance cm : 0.5       1100 clerance cm3/1000 strokes : 35.0 clerance cm3/1000 strokes : 35.0 clerance cm3/1000 strokes : 35.0 clerance cm3/1000 strokes : 35.0 clerance cm3/1000 strokes : 35.0 clerance cm3/1000 strokes : 35.0 clerance cm3/1000 strokes : 35.0 clerance cm3/1000 strokes : 35.0 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance cm3/1000 strokes : 1.5 clerance		:	100	<del>†</del>	Shutoff solenoid	:		
cm3/1000 strokes :         30.0           Shutoff solenoid Volt :         24           Volt :         24           Com/10s :         22.2           Check tolerance cm/10s :         22.2           Check tolerance cm/10s :         22.2           INJECTION-PUMP TEST SPECIFICATIONS :         22.2           TIMING DEVICE CHARACTERISTIC :         DELIVERY AND BREAKAWAY CHARACTERISTIC           Rated speed rpm :         1000 :           SV travel mm :         5.2 :           Tolerance mm :         0.4 :           Check :         cm3/1000 strokes :         3.0 :           Check tolerance mm :         0.7 :           Shutoff solenoid :         24 :           Volt :         24 :           Shutoff solenoid :         24 :           Volt :         24 :           SV travel mm :         1.8 :           Tolerance mm :         0.4 :           Check tolerance mm :         0.4 :           Colerance mm :         0.4 :           Check tolerance mm :         0.4 :           Colerance mm :         0.7 :           Shutoff solenoid :         24 :           Volt :         24 :           SUPPLY PUMP PRESSURE CHARACTERISTIC :         Rated	cm3/1000 strokes	:	100.0	Ţ		:		
Volt	cm3/1000 strokes	:	30.0	‡	Overflow quantity			
Check tolerance   ccm/10s   : 22.2		:	24	‡	Tolerance	:		
CEM/10s				‡	ccm/10s	:	22.2	
INJECTION-PUMP TEST SPECIFICATIONS				‡		:	22.2	
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1000  SV travel mm : 5.2 Tolerance mm : 0.4 Check Check Colerance mm : 0.7 Shutoff solenoid Volt : 24  SV travel mm : 1.8 SV travel mm : 1.8 Tolerance mm : 0.4 Check tolerance Cm3/1000s : 6.0 SV travel mm : 1.8 SV travel mm : 1.8 SV travel mm : 1.8 SV travel mm : 1.8 SV travel mm : 1.8 SV travel mm : 1.8 SV travel mm : 1.8 SV travel mm : 1.8 Tolerance mm : 0.4 Check tolerance Che	INJECTION-PUMP TE	ST S	PECIFICATIONS	}		:	24	
Del. quantity				‡	DELIVERY AND BREA	KAWA	Y CHARACTE	ERISTIC
SV travel mm	Rated speed rpm	:	1000	‡	Rated speed rpm	:	1045	
Check	SV travel mm	:	5.2	+		:	63.0	
tolerance mm : 0.7 Shutoff solenoid Volt : 24  Rated speed rpm : 500  SV travel mm : 1.8 Tolerance mm : 0.4 Check tolerance cm3/1000s. : 6.0  SV travel mm : 1.8 Del. quantity cm3/1000 strokes : 35.0 Check tolerance mm : 0.7 Check tolerance cm3/1000s. : 10.0 Shutoff solenoid Volt : 24  SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1000 Supply pomp pressure bar : 4.9 Tolerance hPa : 0.3 Shutoff solenoid Volt : 24  Rated speed rpm : 150 Supply pomp pressure bar : 4.9 Tolerance hPa : 0.3 Shutoff solenoid Volt : 24  Rated speed rpm : 1000 Supply pomp pressure bar : 4.9 Tolerance hPa : 0.3 Shutoff solenoid Volt : 24  Rated speed rpm : 1000 Supply pomp Pressure bar : 29 Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Tolerance hPa : 0.3 Tolerance hPa : 0.3 Tolerance hPa : 0.3 Tolerance hPa : 0.3 Tolerance hPa : 0.3 Tolerance hPa : 0.3 Tolerance hPa : 0.3 Tolerance		:	0.4	<u> </u>		:	3.0	
Volt : 24  Rated speed rpm : 500  SV travel mm : 1.8 Tolerance mm : 0.4 Check tolerance mm : 0.7 Shutoff solenoid Volt : 24  Supply PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1000 Supply pomp pressure bar : 4.9 Tolerance hPa : 0.3 Shutoff solenoid Volt : 24  Rated speed rpm : 1000 Shutoff solenoid Volt : 24  Supply pomp Pressure bar : 4.9 Rated speed rpm : 1.5 Shutoff solenoid Volt : 24  Rated speed rpm : 1.5 Supply pomp Pressure bar : 4.9 Rated speed rpm : 1.5 Shutoff solenoid Volt : 24  Rated speed rpm : 1.5 Shutoff solenoid Volt : 24  Rated speed rpm : 1.5 Shutoff solenoid Volt : 24  Rated speed rpm : 1.5 Shutoff solenoid Volt : 24  Rated speed rpm : 1000 Supply pomp Pressure bar : 2.9 Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 73.5 Shutoff solenoid	tolerance mm		0.7	<u> </u>	Check tolerance			
Rated speed rpm : 500  SV travel mm : 1.8		:	24	İ	Shutoff solenoid	•		
SV travel mm : 1.8 Tolerance mm : 0.4 Check tolerance mm : 0.7 Shutoff solenoid Volt : 24  SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1000 Supply pomp pressure bar : 4.9 Tolerance hPa : 0.3 Shutoff solenoid Volt : 24  Rated speed rpm : 500 Supply pomp pressure bar : 500 Supply pomp Tolerance hPa : 0.3 Supply pomp Pressure bar : 2.9 Tolerance hPa : 0.3 Supply pomp Tolerance cm3/1000s. : 1.5 Shutoff solenoid Volt : 24  Rated speed rpm : 1000  Rated speed rpm : 1000  Rated speed rpm : 500 Supply pomp Tolerance hPa : 0.3 Shutoff solenoid Volt : 24  Rated speed rpm : 500 Supply pomp Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 73.5 Shutoff solenoid	Rated speed rpm	:	500	+		•		
Check tolerance mm : 0.7		:		Ŧ	Del. quantity	•		
Shutoff solenoid Volt : 24  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1170 Del. quantity cm3/1000 strokes : 1.5 Supply pomp pressure bar : 4.9 Tolerance hPa : 0.3 Shutoff solenoid Volt : 24  Rated speed rpm : 1000  Cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5 Shutoff solenoid Volt : 24  Rated speed rpm : 500 Supply pomp pressure bar : 2.9 Tolerance hPa : 0.3 Supply pomp pressure bar : 2.9 Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 0.3 Shutoff solenoid Tolerance hPa : 73.5 Shutoff solenoid	Check	•		Ŧ	Check tolerance	•		
SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1000  Supply pomp  pressure bar : 4.9  Tolerance hPa : 0.3  Shutoff solenoid  Volt : 24  Rated speed rpm : 500  Supply pomp  pressure bar : 2.9  Tolerance hPa : 0.3  Shutoff solenoid  Volt : 24  Rated speed rpm : 500  Supply pomp  pressure bar : 2.9  Tolerance hPa : 0.3  Shutoff solenoid  Volt : 24  Rated speed rpm : 1000  Patternance hPa : 0.3  Shutoff solenoid  Volt : 24  Rated speed rpm : 1000  Rated speed rpm : 1000  Del. quantity  cm3/1000 strokes : 73.5  Tolerance hPa : 0.3  Shutoff solenoid	Shutoff solenoid	:		‡	Shutoff solenoid	:		
Rated speed rpm : 1000		:		‡		:		
Supply pomp  pressure bar : 4.9  Tolerance hPa : 0.3  Shutoff solenoid  Volt : 24  Rated speed rpm : 500  Supply pomp  pressure bar : 2.9  Tolerance hPa : 0.3  Tolerance  cm3/1000 strokes : 1.5  Shutoff solenoid  Volt : 24  Rated speed rpm : 1000  pressure bar : 2.9  Tolerance hPa : 0.3  Shutoff solenoid  Tolerance	SUPPLY PUMP PRESSI	URE		; ‡	Del. quantity	:		
Tolerance hPa : 0.3		:	1000	+		:	1.5	
Volt : 24  Rated speed rpm : 500  Supply pomp		:		‡		:	1.5	
Rated speed rpm : 500  Supply pomp pressure bar : 2.9  Tolerance hPa : 0.3  Shutoff solenoid  Polt : 24  Rated speed rpm : 1000  Pol. quantity  cm3/1000 strokes : 73.5  Tolerance	Shutoff solenoid	:		‡		:	1.5	
Supply pomp + Rated speed rpm : 1000 pressure bar : 2.9 + Del. quantity Tolerance hPa : 0.3 + cm3/1000 strokes : 73.5 Shutoff solenoid + Tolerance		:		+		:	24	
Tolerance hPa : 0.3 + cm3/1000 strokes : 73.5 Shutoff solenoid + Tolerance	Supply pomp	•		<u> </u>		:	1000	
- 15 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Tolerance hPa	:		1	cm3/1000 strokes	:	73.5	
		:	24	1		:	1.5	

Object Automorphis				
Check tolerance			olerance	
cm3/1000s.	: 3.0		m3/1000 strokes	: 1.5
Shutoff solenoid		+ c	heck tolerance	
Volt	: 24	<u> </u>	m3/1000s.	: 1.5
		1	pread	
Rated speed rpm	: 750		m3/1000 strokes	: 5.0
	. 150	T	IIID/ TODO SCI OKES	. 5.0
Del. quantity	75.0	Ť <u>-</u>		
cm3/1000 strokes	: 75.9	† F	ULL-LOAD STOP CO	NTROL LEVER
Tolerance		+		
cm3/1000 strokes	: 1.5	+ R	lated speed rpm	: 500
Check tolerance		+ D	el. quantity	
cm3/1000s.	: 3.5		m3/1000 strokes	: 1.5
Shutoff solenoid	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	olerance	• (
	: 24	1		: 1.5
Volt	: 24	1	m3/1000 strokes	: 1.5
		† 5	pread	
Rated speed rpm	: 500		m3/1000 strokes	: 5.0
Del. quantity		+ c	heck tolerance	
cm3/1000 strokes	: 62.7	+ c	m3/1000s.	: 1.5
Tolerance		↓ s	pread	
cm3/1000 strokes	: 4.0		m3/1000 strokes	: 5.0
Check tolerance	, 4.0	T	1000 311 0KES	. ,
		Ť,	NIE NELTWENY	
cm3/1000s.	: 6.0	† +	DLE DELIVERY	
Shutoff solenoid		†		
Volt	: 24		ated speed rpm	: 540
		+ D	el. quantity	
Rated speed rpm	<i>9</i> 00	+ c	m3/1000 strokes	: 1.5
Del. quantity			olerance	
cm3/1000 strokes	: 74.9		m3/1000 strokes	: 1.5
Tolerance	• • • • • • • • • • • • • • • • • • • •		heck tolerance	
cm3/1000 strokes	: 0.5		m3/1000s.	: 1.5
Check tolerance	. 0.5		hutoff solenoid	• 1.5
	: 3.0	,		: 24
cm3/1000s.	; 3.0	Ť V	olt	: 24
Shutoff solenoid		†		
Volt	: 24	+		
		+		
		+		
MECHANICAL SHUTOF	F	+		
		+		
Rated speed rpm	: 1000	↓ s	TART TRANSITION	
Del. quantity	. ,555	1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	: 1.5	J	ated speed nom	: 250
cm3/1000 strokes	. 1.5		ated speed rpm	: 250
Tolerance	. 4 =	† "	el. quantity	. /5.0
cm3/1000 strokes	: 1.5		m3/1000 strokes	: 45.0
Spread			olerance	
cm3/1000 strokes	: 5.0		m3/1000 strokes	: 15.0
Check tolerance		∔ si	hutoff solenoid	
cm3/1000s.	: 1.5	1 v	olt	: 24
Spread	•	1		-
cm3/1000 strokes	: 5.0	1		
Shutoff solenoid		T	ated speed nom	: 130
	: 24		ated speed rpm	: 130
Volt	: 24		el. quantity	440.0
			m3/1000 strokes	: 110.0
<del></del>			olerance	
ELECTR. SHUTOFF		+ cr	n3/1000 strokes	: 30.0
CONTROL LEVER, ID	LE STOP	∔ si	hutoff solenoid	
·			olt	: 24
Rated speed rpm	: 500	1		
Del. quantity		1 -		
cm3/1000 strokes	: 1.5	1 Δ.	SSEMBLY AND ADJUS	STMENT DIMENSIONS
1 1000 Strokes	. 1	1 ~~	TOURSET MITO MOUNT	The state of the s

Dimension KF mm : 5,2
Tolerance mm : +0,2
Dimension MS mm : 1,0
Tolerance mm : +0,02

CONTROL LEVER POSITION SET

Control lever

position YA mm : 34,8..38,8

Control lever

position YB mm : 35,7..41,3

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 26.09.95 Edition Test oil : ISO 4113

: 0 460 416 067 Part no. Pump designation: VE6/11F1150R394

Customer-spec. information : IVECO-FIAT Customer : 8065.25.220 Motor Power KW 78.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 1 Tolerance °C

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

Tolerance bar

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

**REMARKS** 

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 700 Aneroid pressure

hPa 1000

Setting mm 2.4 Tolerance mm 0.2 Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 700

Aneroid pressure

1000 hPa

Setting hPa 4.6 Tolerance hPa 0.3

Shutoff solenoid 12 Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

1000 Rated speed rpm : Aneroid pressure

1000 hPa

Del. quantity cm3/1000 strokes : 84.0

Tolerance

cm3/1000 strokes : 0.5 Spread

cm3/1000 strokes : 3.5 Check tolerance 4.0

cm3/1000s.

Shutoff solenoid Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

500 Rated speed rpm

Del. quantity

cm3/1000 strokes : 74.5

Tolerance

cm3/1000 strokes 0.5

Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s.4.0

IDLE SETTING

Rated speed rpm 325

Del. quantity 18.0

cm3/1000 strokes :

Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

12 Volt

Spread			1 Cumply nown
cm3/1000 strokes	•	3.0	+ Supply pomp + pressure bar : 6.4
Check tolerance	•	3.0	Tolerance hPa : 0.3
cm3/1000s.	•	4.0	+ Shutoff solenoid
	•		+ Voit : 12
			+
FULL-LOAD SPEED F	REGUI	LATION	→ Rated speed rpm : 550
			+ Aneroid pressure
Rated speed rpm	:	1260	hPa : 1000
Pressure hPa	;	1000	+ Supply pomp
Del. quantity			+ pressure bar : 3.9
cm3/1000 strokes	:	<b>50.</b> 0	† Tolerance hPa : 0.3
Tolerance		~ ^	+ Shutoff solenoid
cm3/1000 strokes	:	3.0	+ Volt : 12
Shutoff solenoid		13	OVEREI OLI OLIANITATY
Volt	:	12	+ OVERFLOW QUANTITY
STARTING FUEL DEL	TVE	DV	Rated speed rpm : 500
STAKITING FUEL DEL	TAE	K I	+ Overflow quantity
Rated speed rpm	:	100	+ ccm/10s : 63.8
Del. quantity	•	100	+ Tolerance
cm3/1000 strokes	:	110.0	+ ccm/10s : 22.2
Tolerance	•		
cm3/1000 strokes	:	25.0	→ Check tolerance
Shutoff solenoid			+ ccm/10s : 22.2
Volt	:	12	+ Shutoff solenoid
			† Volt : 12
			+
			+ Rated speed rpm : 1150
			+ Aneroid pressure
			1 4.0-
TALLECTION DUMP TO	·cT (	CDECTET CATTO	† hPa : 1000
INJECTION-PUMP TE	ST S	SPECIFICATION	Overflow quantity
			Overflow quantity ccm/10s : 97.2
INJECTION-PUMP TE			Overflow quantity ccm/10s : 97.2 Tolerance
TIMING DEVICE CHA	RACT	TERISTIC	Overflow quantity ccm/10s : 97.2
TIMING DEVICE CHA	RACT		Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6
TIMING DEVICE CHA	RACT	TERISTIC	Overflow quantity ccm/10s : 97.2 Tolerance
TIMING DEVICE CHA Rated speed rpm Aneroid pressure	RACT	TERISTIC	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa	RACT	1000 1000 1000 0.4	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 41.6
TIMING DEVICE CHARATED SPEED TO THE CHARATED TO THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF T	RACT	TERISTIC 1000 1000	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12
TIMING DEVICE CHARATED Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid	RACT	1000 1000 1000 0.4 0.9	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6 Shutoff solenoid
TIMING DEVICE CHARATED SPEED TO THE CHARATED TO THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF THE CHARACTER OF T	RACT	1000 1000 1000 0.4	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC
TIMING DEVICE CHARACTER And Android pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : :	1000 1000 1000 0.4 0.9	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260
TIMING DEVICE CHARACTER And Speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt	RACT	1000 1000 1000 0.4 0.9	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure
TIMING DEVICE CHARATED SPEED TO PROBLEM TO LETANCE MAN Check tolerance man Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	: : : :	1000 1000 0.4 0.9 12	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000
TIMING DEVICE CHARACTER And Speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : :	1000 1000 1000 0.4 0.9	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity
TIMING DEVICE CHARATED SPEED TO PARATED SPEED TO PARATED SOLUTION TO PARAMETER TO PARAMETER SOLUTION TO PARAMETER SPEED TO PARAMETER SOLUTION TO PARAMETER SOLUTION TO PARAMETER SPEED T	: : : :	1000 1000 0.4 0.9 12 550 1000	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0
TIMING DEVICE CHARACTER Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm	: : : :	1000 1000 0.4 0.9 12 550 1000 1.2	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance
TIMING DEVICE CHARATED SV travel mm  Tolerance mm  Check tolerance mm  Shutoff solenoid Volt  Rated speed rpm  Aneroid pressure hPa  SV travel mm  Tolerance mm	: : : :	1000 1000 0.4 0.9 12 550 1000	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 3.0
TIMING DEVICE CHARATED SV travel mm  Check  Colorance mm  Check  Colorance mm  Check  Colorance mm  Check  Colorance mm  Check  Colorance mm  Check  Colorance mm  Check  Colorance mm  Check  Colorance mm  Check  Check  Check	: : : :	1000 1000 0.4 0.9 12 550 1000 1.2	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance
TIMING DEVICE CHARATED SV travel mm  Tolerance mm  Check tolerance mm  Shutoff solenoid Volt  Rated speed rpm  Aneroid pressure hPa  SV travel mm  Tolerance mm	: : : :	1000 1000 0.4 0.9 12 550 1000 1.2 0.4	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm Check tolerance mm	: : : :	1000 1000 0.4 0.9 12 550 1000 1.2 0.4	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s : 6.0
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : :	1000 1000 0.4 0.9 12 550 1000 1.2 0.4 0.9	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : : : : : : : : : : : : : : : : :	1000 1000 0.4 0.9 12 550 1000 1.2 0.4 0.9	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1280
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS	RACT::::::::::::::::::::::::::::::::::::	1000 1000 0.4 0.9 12 550 1000 1.2 0.4 0.9 12 CHARACTERIST	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1280 Aneroid pressure
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESSI	RACT::::::::::::::::::::::::::::::::::::	1000 1000 0.4 0.9 12 550 1000 1.2 0.4 0.9 12 CHARACTERIST	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1280 Aneroid pressure hPa : 1000
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESSI Rated speed rpm Aneroid pressure	RACT::::::::::::::::::::::::::::::::::::	TERISTIC  1000  1000 0.4 0.9 12 550 1000 1.2 0.4 0.9 12 CHARACTERIST	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1280 Aneroid pressure hPa : 1000 Del. quantity
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESSI	RACT::::::::::::::::::::::::::::::::::::	1000 1000 0.4 0.9 12 550 1000 1.2 0.4 0.9 12 CHARACTERIST	Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6  Check tolerance ccm/10s : 41.6  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1260 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1280 Aneroid pressure hPa : 1000

Check tolerance cm3/1000s. Shutoff solenoid	:	5.0	†	Del. quantity cm3/1000 strokes Tolerance	:	86.5	
Volt	:	12	+	cm3/1000 strakes Check tolerance	:	2.0	
Rated speed rpm Aneroid pressure	:	1350	1	cm3/1000s. Shutoff solenoid	:	3.5	
hPa Del. quantity	;	1000	1	Volt	:	12	
cm3/1000 strokes Tolerance	:	1.5	+	Rated speed rpm Aneroid pressure		1000	
cm3/1000 strokes Check tolerance	:	1.5	+	hPa Del. quantity	:	1000	
cm3/1000S. Shutoff solenoid	:	1.5	+	cm3/1000 strokes Tolerance		84.0	
Volt	:	12	‡	cm3/1000 strokes Check tolerance	:	0.5	
Rated speed rpm Aneroid pressure	:	500	+	cm3/1000s. Shutoff solenoid	:	3.5 12	
hPa LDA/	:	350	+	Volt	•	12	
HBA stroke mm Del. quantity	:	4.7	Ī	ELECTR. SHUTOFF		<del></del>	
cm3/1000 strokes Tolerance	:	79.5	1	CONTROL LEVER, ID	LE S	STOP	
cm3/1000 strokes Check tolerance	:	0.5	+	Rated speed rpm Del. quantity	:	325	
cm3/1000s. Shutoff solenoid	:	4.0	+	cm3/1000 strokes Tolerance		1.5	
Volt	:	12	‡	cm3/1000 strokes Check tolerance	:	1.5	
Rated speed rpm Aneroid pressure	:		‡	cm3/1000s. Spread	:	1.5	
hPa Del. quantity	:	1000	+	cm3/1000 strokes		5.0	
cm3/1000 strokes Tolerance cm3/1000 strokes		81.5 1.5	Ŧ	FULL-LOAD STOP CO		325	
Check tolerance cm3/1000s.	:	3.5	Ī	Rated speed rpm Del. quantity cm3/1000 strokes	:	1.5	
Shutoff solenoid Volt	:	12	1	Tolerance cm3/1000 strokes		1.5	
Rated speed rpm	:	650	1	Spread cm3/1000 strokes		5.0	
Aneroid pressure hPa	:	1000	+	Check tolerance cm3/1000S.	:	1.5	
Del. quantity cm3/1000 strokes	:	89.0	‡	Spread cm3/1000 strokes	:	5.0	
Tolerance cm3/1000 strokes	:	2.0	‡	IDLE DELIVERY			
Check tolerance cm3/1000s.	:	3.5	‡	Rated speed rpm	:	420	
Shutoff solenoid Volt	:	12	Ī	Del. quantity cm3/1000 strokes Tolerance	:	1.5	
Rated speed rpm Aneroid pressure	:	500	Ī	cm3/1000 strokes Check tolerance	:	1.5	
hPa	:	1000	+	cm3/1000s.	:	1.5	

Shutoff solenoid

Volt : 12

START TRANSITION

Rated speed rpm : 250

Del. quantity

cm3/1000 strokes : 70.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 150

Del. quantity

cm3/1000 strokes : 110.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 4.7

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension MS mm : 1,1
Tolerance mm : +-0,2

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 34,9..36,9

Control lever

position YB mm : 48,2..53,8

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 13.11.95 : ISO 4113

Part no.

: 0 460 426 179

Pump designation : VE6/12F1250R406

Customer-spec. information

Customer

: PERKINS

Motor

: Q20 Phaser T6.60

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm 0.55

0.35 Inlet press. bar : 0.05

Tolerance bar

Test nozzle holde

assembly

: 1 688 901 027

Opening pressure

bar

250

Tolerance bar

: 1 680 750 073

Test lines

Outside diameter : 6.00

x inside diameter :

2.00

x length mm :

450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,25 : +-0,02 Tolerance mm

Check

tolerance mm

: +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1000

Aneroid pressure

hPa 1500 :

Setting mm 1.6 Tolerance mm 0.2

SUPPLY PUMP PRESSURE

Rated speed rpm 1000

Aneroid pressure 1500 hPa

Setting hPa 6.2

Tolerance hPa 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 700

Aneroid pressure

1500

Del. quantity cm3/1000 strokes :

84.5

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 5.0

Check tolerance cm3/1000s.5.0

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 64.5

Tolerance

cm3/1000 strokes : 0.5

Check tolerance

cm3/1000s.5.0

IDLE SETTING

Rated speed rpm 325

Del. quantity

cm3/1000 strokes : 10.0

Tolerance

cm3/1000 strokes : 2.0

Spread

cm3/1000 strokes : 5.0

Check tolerance			+	Supply pomp		
cm3/1000s.	:	5.0	1	pressure bar	:	5.0
			+	Tolerance hPa	:	<b>J.</b> 3
			+			
FULL-LOAD SPEED F	REGU	LATION	+	OVERFLOW QUANTITY		
		4/00	+			500
Rated speed rpm	:	1400	†	Rated speed rpm	:	500
Pressure hPa	:	1500	†	Overflow quantity ccm/10s		63.8
Del. quantity cm3/1000 strokes		40.0	Ī	Tolerance	•	03.0
Tolerance	•	40.0	I	ccm/10s		22.2
cm3/1000 strokes	•	3.0	1	CCIII/ 103	•	LL. L
	•	0.0	1	Check tolerance		
STARTING FUEL DEL	IVE	RY	1	ccm/10s	:	22.2
			+			
Rated speed rpm	:	100	+	Rated speed rpm	:	1200
Del. quantity			+	Aneroid pressure		
cm3/1000 strokes	:	130.0	+	hPa	:	1500
Tolerance			+	Overflow quantity		
cm3/1000 strokes	:	30.0	+	ccm/10s	:	97.2
			†	Tolerance		11 /
			†	ccm/10s	:	41.6
			Ţ	Check tolerance		
			I	ccm/10s		41.6
INJECTION-PUMP TE	ST	SPECIFICATIONS	. ↓	CCIII/ 103	•	41.0
2.10201201110111111			1	DELIVERY AND BREA	KAW	AY CHARACTERISTIC
TIMING DEVICE CHA	RAC	TERISTIC	+			
			+	Rated speed rpm	:	1400
Rated speed rpm	:	1100	+	Aneroid pressure		
Aneroid pressure			+	hPa	:	1500
hPa	:	1500	+	Del. quantity		
		0.7	+	cm3/1000 strokes	:	40.0
SV travel mm	:	2.3	†	Tolerance		7.0
Tolerance mm	:	0.4	Ť	cm3/1000 strokes Check tolerance	:	3.0
Check tolerance mm	:	0.7	Ī	cm3/1000s.	:	6.0
toterance min	•	0.7	I	CIII37 10003.	•	0.0
Rated speed rpm	•	900	1	Rated speed rpm	:	1480
Aneroid pressure	•		1	Aneroid pressure	-	
hPa	:	1500	+	hPa	:	1500
			+	Del. quantity		
SV travel mm	:	0.8	+	cm3/1000 strokes	:	3.5
Tolerance mm	:	0.4	+	Check tolerance		7.6
Check		0.7	†	cm3/1000s.	:	3.5
tolerance mm	:	0.7	Ť	Datad aread nam		1350
SUPPLY PUMP PRESS	LIDE	CHADACTEDISTI	r	Rated speed rpm Aneroid pressure	•	טככו
SUFFET FUME PRESS	ORE	CHARACTERISTI	I	hPa		1500
Rated speed rpm	•	1200	1	Del. quantity	•	1500
Aneroid pressure	•	. 200	1	cm3/1000 strokes	:	65.0
hPa	:	1500	+	Tolerance		
Supply pomp			+	cm3/1000 strokes	:	8.0
pressure bar		7.2	+	Check tolerance		
Tolerance hPa	:	0.3	+	cm3/1000s.	:	10.0
		700	+			700
Rated speed rpm	:	700	†	Rated speed rpm	:	700
Aneroid pressure	_	1500	†	Aneroid pressure hPa		700
hPa	:	1500	1	IIFd	•	100
			Т			

Del. quantity cm3/1000 strokes		79.0	+ IDLE DELIVER	<b>.</b> V		
Tolerance	•		+ INCO DECIVE	(1		
cm3/1000 strokes Check tolerance	:	0.5	+ Rated speed + Del. quantit		:	420
cm3/1000s.	:	3.5	- cm3/1000 str		:	1.5
Rated speed rpm Aneroid pressure	:	1200	cm3/1000 str		:	1.5
hPa Del. quantity	:	1500	- cm3/1000s.		:	1.5
cm3/1000 strokes Tolerance	:	89.5	Rated speed Del. quantit		:	350
cm3/1000 strokes Check tolerance	:	1.5	cm3/1000 str		:	5.0
cm3/1000s.	:	3.5	cm3/1000 str		:	3.0
Rated speed rpm Del. quantity	:	700	cm3/1000s.	nice	:	5.0
cm3/1000 strokes Tolerance	:	60.5	1			
cm3/1000 strokes Check tolerance	:	2.5	1			
cm3/1000s.	:	4.0	+ START TRANSI	TTON		
Rated speed rpm Aneroid pressure	:	1000	Rated speed		:	230
hPa Del. quantity	:	1500	Del. quantit	у		70.0
cm3/1000 strokes Tolerance	:	83.5	Tolerance cm3/1000 str			20.0
cm3/1000 strokes Check tolerance	:	1.5	1	OKCS	•	20.0
cm3/1000s.	:	3.5	Rated speed Del. quantit		:	130
Rated speed rpm Aneroid pressure	:	700	cm3/1000 str		:	140.0
hPa Del. quantity	:	1500	cm3/1000 str	okes	:	30.0
cm3/1000 strokes Tolerance	:	84.5	ASSEMBLY AND	AD.111	STMEN	NT DIMENSIONS
cm3/1000 strokes Check tolerance	:	0.5	Dimension KF		: 6,	
cm3/1000s.	:	3.5	Tolerance mm MS1 dimensio	n Din min	: +-	-0,02 .0
MECHANICAL SHUTOF	F		Tolerance mm	ı	: +(	0,15/-0,1
Rated speed rpm	:	1200	CONTROL LEVE	ים חמכי	T T T O.N	,
Aneroid pressure hPa	:	1500	CONTROL LEVE	K 705.	TITON	1
Del. quantity cm3/1000 strokes	:	1.5	Control love			
Tolerance cm3/1000 strokes	:	1.5	+ Control leve + position YA		: 37	',239,2
Check tolerance cm3/1000s.	:	1.5	Control leve		: 52	2,460,6

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 05,04,95 Edition : ISO 4113 Test oil

: 0 460 424 075 Part no. Pump designation: VE4/12F1350R407

Customer-spec. information : IVECO-FIAT Customer

: 8040.25.4000 TC Motor

Power KW 85.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance \*C 1

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

250 bar Tolerance bar

: 1 680 750 073 Test lines

Outside diameter :

x inside diameter: 2.00 x length mm 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

K<sub>0</sub>4

(as of UT) mm : 0,3 Tolerance mm : +--0,04

Check

tolerance mm : +-0,06

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1000 Aneroid pressure

1000 hPa

1.6 Setting mm Tolerance mm 0.2

Shutoff solenoid

Volt 24

SUPPLY PUMP PRESSURE

1000 Rated speed rpm

Aneroid pressure

hPa 1000

Setting hPa 6.3 Tolerance hPa 0.3

Shutoff solenoid

24 Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 700

Aneroid pressure

1000 Del. quantity

cm3/1000 strokes : 79.5

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s.5.0

Shutoff solenoid

24 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 600

Del. quantity

cm3/1000 strokes : 46.0

Tolerance

cm3/1000 strokes 0.5

Shutoff solenoid

Volt

24

Check tolerance

cm3/1000s. 5.0

IDLE SETTING

Rated speed rpm	:	350		‡	Shutoff solenoid Volt	:	24
Del. quantity cm3/1000 strokes	:	15.0		+	SUPPLY PUMP PRESS	URE	CHARACTERISTIC
Tolerance cm3/1000 strokes Shutoff solenoid	:	2.0		+	Rated speed rpm Aneroid pressure	:	1350
Volt Spread	;	24		Ī	hPa Supply pomp	:	1000
cm3/1000 strokes Check tolerance	:	3.5		‡	pressure bar Tolerance hPa	:	8.0 0.3
cm3/1000s.	:	5.0		+	Shutoff solenoid Volt	:	24
FULL-LOAD SPEED R	REGUL	ATION		<u> </u>	Rated speed rpm Ameroid pressure	:	600
Rated speed rpm Pressure hPa	:	1525 1000		‡	hPa Supply pomp	:	1000
Del. quantity cm3/1000 strokes	:	33.0		†	pressure bar Tolerance hPa	:	4.0 0.3
Tolerance cm3/1000 strokes Shutoff solenoid	:	3.0		†	Shutoff solenoid Volt	:	24
Volt	:	24		Ī	OVERFLOW QUANTITY		
STARTING FUEL DEL	.IVER			+	Rated speed rpm Aneroid pressure	:	
Rated speed rpm Del. quantity		100		‡	hPa Overflow quantity	:	1000
cm3/1000 strokes Tolerance cm3/1000 strokes		95.0 30.0		Ī	ccm/10s Tolerance ccm/10s	:	97.2 41.6
Shutoff solenoid Volt	:	24		1	Check tolerance	•	41.0
				+	ccm/10s Shutoff solenoid	:	41.6
				‡	Volt	:	24
INJECTION-PUMP TE	ST S	PECIFICAT:	IONS	Ī	Rated speed rpm Aneroid pressure hPa	:	600 1000
TIMING DEVICE CHA	RACT	ERISTIC		‡	Overflow quantity ccm/10s	:	63.8
Rated speed rpm Aneroid pressure	:	1100		†	Tolerance ccm/10s	:	22.2
hPa Tolerance mm Check	:	1000 0.4		Ī	Check tolerance	•	22.2
tolerance mm Shutoff solenoid	:	0.9		‡	Shutoff solenoid Volt	•	24
Volt	:	24		+	DELIVERY AND BREAK	<awa< td=""><td>Y CHARACTERISTIC</td></awa<>	Y CHARACTERISTIC
Rated speed rpm Aneroid pressure	:	1350 1000		Ī	Rated speed rpm Aneroid pressure	:	1525
hPa SV travel mm	:	4.1		Ī	hPa Del. quantity	:	1000
Tolerance mm Check	:	0.4		‡	cm3/1000 strokes Tolerance	:	33.0
tolerance mm	:	0.9		+	cm3/1000 strokes	:	3.0

K05

Check tolerance cm3/1000s.	: 6.0	+ Del. quantity + cm3/1000 strokes : 74.0
Shutoff solenoid Volt	: 24	Tolerance cm3/1000 strokes : 2.0
Rated speed rpm Aneroid pressure	: 1475	+ Check tolerance + cm3/1000s. : 3.5 + Shutoff solenoid
hPa Del. quantity	: 1000	Volt : 24
cm3/1000 strokes Tolerance	: 50.0	Rated speed rpm : 600 Aneroid pressure
cm3/1000 strokes Check tolerance		+ hPa : 1000 + Del. quantity
cm3/1000s. Shutoff solenoid	: 10.0	cm3/1000 strokes : 84.5 Tolerance
Volt	: 24	+ cm3/1000 strokes : 2.0 + Check tolerance
Rated speed rpm Aneroid pressure hPa	: 1610 : 1000	+ cm3/1000S. : 3.5 + Shutoff solenoid + Volt : 24
Del. quantity cm3/1000 strokes		Rated speed rpm : 700
Tolerance cm3/1000 strokes	: 1.5	Aneroid pressure hPa : 1000
Check tolerance cm3/1000s.	: 1.5	Del. quantity cm3/1000 strokes : 79.5
Shutoff solenoid Volt	: 24	Tolerance cm3/1000 strokes : 0.5
Rated speed rpm	: 600	+ Check tolerance + cm3/1000S. : 3.5 + Shutoff solenoid
Aneroid pressure hPa	: 375	Volt : 24
LDA/	7.5	+
HBA stroke mm Del. quantity	: 7.5	ELECTR. SHUTOFF
cm3/1000 strokes Tolerance		CONTROL LEVER, IDLE STOP
Check tolerance	: 0.5	Rated speed rpm : 350  Del. quantity
cm3/1000s. Shutoff solenoid	: 4.0	cm3/1000 strokes : 1.5 Tolerance
Volt Rated speed rpm	: 24 : 1350	+ cm3/1000 strokes : 1.5 + Check tolerance + cm3/1000s. : 1.5
Aneroid pressure hPa	: 1000	Spread - cm3/1000 strokes : 5.0
Del. quantity cm3/1000 strokes		FULL-LOAD STOP CONTROL LEVER
Tolerance cm3/1000 strokes	: 1.5	Rated speed rpm : 350
Check tolerance cm3/1000s.	: 3.5	Del. quantity cm3/1000 strokes : 1.5
Shutoff solenoid Volt	: 24	Tolerance cm3/1000 strokes : 1.5 Spread
Rated speed rpm Aneroid pressure	: 1200	+ cm3/1000 strokes : 5.0 + Check tolerance
hPa		

Spread cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm 475

Del. quantity cm3/1000 strokes : 1.5

Tolerance

1.5 cm3/1000 strokes :

Check tolerance

cm3/1000s. 1.5

Shutoff solenoid

24 Volt

START TRANSITION

250 Rated speed rpm

Del. quantity cm3/1000 strokes :

55.0

Tolerance

10.0 cm3/1000 strokes :

Shutoff solenoid

24 Volt

130 Rated speed rpm

Del. quantity

cm3/1000 strokes : 95.0

Tolerance

cm3/1000 strokes : 30.0

Shutoff solenoid

24 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

7.5 HBA stroke mm

: 5,4 Dimension KF mm

Tolerance mm

: +-0,2

MS1 dimension mm

: 1,46 : +0,15/-0,1

Tolerance mm

KSB travel mm

: 10,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,9..39,9

K07

Control Lever

position YB mm : 42,0..50,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.04.95 : ISO 4113 Test oil

: 0 460 424 076 Part no. Pump designation: VE4/12F1350R407-1

Customer-spec. information : IVECO-FIAT Customer

Motor : 8040.45.4000 TCA

Power KW 102.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

restriction mm 0.75

0.35 Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

250 bar Tolerance bar 3

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter: 2.00 450 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1000 Rated speed rpm

Aneroid pressure

1000 hPa

Setting mm 1.6 Tolerance mm 0.2

Shutoff solenoid

24 Volt

SUPPLY PUMP PRESSURE

1000 Rated speed rpm

Aneroid pressure

hPa 1000

Setting hPa 6.5 Tolerance hPa 0.3

Shutoff solenoid

Volt 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rom 700 Aneroid pressure

1000

Del. quantity cm3/1000 strokes : 72.5

Tolerance

cm3/1000 strokes : 0.5

Spread

3.5 cm3/1000 strokes :

Check tolerance

cm3/1000s. 5.0

Shutoff solenoid

Volt 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rom 600

Del. quantity

cm3/1000 strokes : 43.0

Tolerance

cm3/1000 strokes 0.5

Shutoff solenoid

24 Volt

Check tolerance

cm3/1000s. 5.0

IDLE SETTING

Rated speed rpm 350

Del. quantity cm3/1000 strokes : 15.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 24

Spread			+ Supply pomp	
cm3/1000 strokes	:	3.5	pressure bar : 7.9	
Check tolerance			Tolerance hPa : 0.3	
cm3/1000S.	:	5.0	+ Shutoff solenoid	
			+ Volt : 24	
FULL LOAD OPERS (		LATTON	Patadanadana (00	
FULL-LOAD SPEED F	くとらい	LATION	+ Rated speed rpm : 600 + Aneroid pressure	
Rated speed rpm		1525	hPa : 1000	
Pressure hPa	:	1000	+ Supply pomp	
Del. quantity	•		pressure bar : 4.8	
cm3/1000 strokes	:	26.0	† Tolerance hPa : 0.3	
Tolerance			+ Shutoff solenoid	
cm3/1000 strokes	:	3.0	+ Volt : 24	
Shutoff solenoid		27	1 01/505/01/01/44/5777	
Volt	:	24	+ OVERFLOW QUANTITY	
STARTING FUEL DEL	TVE	DV	Rated speed rpm : 1350	
SINKITIAG LOEF DEF	- T A C	K I	Aneroid pressure	
Rated speed rpm	:	100	+ hPa : 1000	
Del. quantity	•		Overflow quantity	
cm3/1000 strokes	:	95.0	+ ccm/10s : 138.8	
Tolerance			+ Tolerance	
cm3/1000 strokes	:	30.0	+ ccm/10s : 41.6	
Shutoff solenoid		27		
Volt	:	24	+ Check tolerance + ccm/10s : 41.6	
			Shutoff solenoid	
			+ Volt : 24	
			+	
			+ Rated speed rpm : 600	
INJECTION-PUMP TE	ST	SPECIFICATIONS	+ Aneroid pressure	
			+ hPa : 1000	
TIMING DEVICE CHA	RAC	TERISTIC	+ Overflow quantity	
			+ ccm/10s : 97.2	
Rated speed rpm	RAC	TERISTIC 1100	ccm/10s : 97.2 Tolerance	
Rated speed rpm Aneroid pressure		1100	+ ccm/10s : 97.2	
Rated speed rpm Aneroid pressure hPa			ccm/10s : 97.2 Tolerance	
Rated speed rpm Aneroid pressure		1100 1000	ccm/10s : 97.2   Tolerance   ccm/10s : 22.2   Check tolerance   ccm/10s : 22.2	
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm		1100 1000	ccm/10s : 97.2 Tolerance ccm/10s : 22.2 Check tolerance ccm/10s : 22.2 Shutoff solenoid	
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid		1100 1000 0.4 0.9	ccm/10s : 97.2   Tolerance   ccm/10s : 22.2   Check tolerance   ccm/10s : 22.2	
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm		1100 1000 0.4	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2 Shutoff solenoid Volt : 24	
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt	:	1100 1000 0.4 0.9 24	ccm/10s : 97.2 Tolerance ccm/10s : 22.2 Check tolerance ccm/10s : 22.2 Shutoff solenoid	(C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm		1100 1000 0.4 0.9	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2 Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:	(C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure	:	1100 1000 0.4 0.9 24 1350	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2 Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST: Rated speed rpm : 1525	[C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm	:	1100 1000 0.4 0.9 24	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2 Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:	[C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure	:	1100 1000 0.4 0.9 24 1350 1000 4.1	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2 Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity	(C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm	:	1100 1000 0.4 0.9 24 1350 1000	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2 Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 26.0	(C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check	:	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2 Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 26.0 Tolerance	(C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm	:	1100 1000 0.4 0.9 24 1350 1000 4.1	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2 Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : 3.0	I.C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	:	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2 Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance	(C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm	:	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2 Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0	ιc
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9 24	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2  Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s : 6.0 Shutoff solenoid	. C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9 24	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2  Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 26.0  Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid	C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9 24	Tolerance ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2  Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 24  Rated speed rpm : 1450	(C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure	: : : : : :	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9 24 CHARACTERISTIC	ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2  Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 26.0  Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 24  Rated speed rpm : 1450 Aneroid pressure	(C
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm	: : : : : :	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9 24 CHARACTERISTIC	Tolerance ccm/10s : 97.2 Tolerance ccm/10s : 22.2  Check tolerance ccm/10s : 22.2  Shutoff solenoid Volt : 24  DELIVERY AND BREAKAWAY CHARACTERIST:  Rated speed rpm : 1525 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 24  Rated speed rpm : 1450	[C

Del. quantity		<b>57.</b> 0	+	Rated speed rpm		600	
cm3/1000 strokes Tolerance	:	53.0	‡	Aneroid pressure hPa	:	1000	
cm3/1000 strokes	;	8.0	+	Del. quantity			
Check tolerance cm3/1000s.	•	10.0	İ	cm3/1000 strokes Tolerance	:	76.5	
Shutoff solenoid	•		+	cm3/1000 strokes	:	2.0	
Volt	:	24	†	Check tolerance		7 5	
Rated speed rpm	:	1600	1	cm3/1000S. Shutoff solenoid	:	3.5	
Aneroid pressure			+	Volt	:	24	
hPa Del. quantity	:	1000	1	Rated speed rpm	:	700	
cm3/1000 strokes	:	1.5	+	Aneroid pressure	•		
Tolerance cm3/1000 strokes		1.5	†	hPa Del. quantity	:	1000	
Check tolerance	•	1.5	Į	cm3/1000 strokes	:	72.5	
cm3/1000s.	:	1.5	+	Tolerance		0.5	
Shutoff solenoid Volt	•	24	Ī	cm3/1000 strokes Check tolerance	:	0.5	
	•		+	cm3/1000s.	:	3.5	
Rated speed rpm Aneroid pressure	:	600	1	Shutoff solenoid Volt		24	
hPa	:	510	Į	VOCC	•	24	
104/			†				
LDA/ HBA stroke mm	:	6.9	I	ELECTR. SHUTOFF			
Del. quantity			+	CONTROL LEVER, ID	LE S	TOP	
cm3/1000 strokes Tolerance	:	62.5	İ	Rated speed rpm	:	350	
cm3/1000 strokes	:	0.5	1	Del. quantity			
Check tolerance		4.0	+	cm3/1000 strokes	:	1.5	
cm3/1000s. Shutoff solenoid	•	4,0	Ī	Tolerance cm3/1000 strokes	:	1.5	
Volt	:	24	+	Check tolerance		4 -	
Rated speed rpm	:	1350	‡	cm3/1000s. Spread	:	1.5	
Aneroid pressure	•		+	cm3/1000 strokes	:	5.0	
hPa Del. quantity	:	1000	<u> </u>	FULL-LOAD STOP CO	NTDO	1 EVED	
cm3/1000 strokes	:	65.0	Ţ	TOLL LOAD STOP CO	1411/01	L ELVEN	
Tolerance		1.5	†	Rated speed rpm	:	350	
cm3/1000 strokes Check tolerance	·	1.5	I	Del. quantity cm3/1000 strokes	:	1.5	
cm3/1000s.	:	3.5	+	Tolerance		4 5	
Shutoff solenoid Volt	:	24	‡	cm3/1000 strokes Spread	:	1.5	
	•		+	cm3/1000 strokes	:	5.0	
Rated speed rpm Aneroid pressure	:	1200	İ	Check tolerance cm3/1000s.		1.5	
hPa	:	1000	+	Spread	•		
Del. quantity		65.5	+	cm3/1000 strokes	:	5.0	
cm3/1000 strokes Tolerance	•	05.5	Į	IDLE DELIVERY			
cm3/1000 strokes	:	2.0	+		_	/75	
Check tolerance cm3/1000s.	:	3.5	‡	Rated speed rpm Del. quantity	:	475	
Shutoff solenoid	•		+	cm3/1000 strokes	:	1.5	
Volt	:	24	<u>†</u>	Tolerance cm3/1000 strokes	•	1.5	
			т	CHIST FOUND SET ORES	•	٠٠١	

Check tolerance cm3/1000s. : 1.5 Shutoff solenoid

Volt : 24

### START TRANSITION

Rated speed rpm : 250

bel. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt : 24

Rated speed rpm : 130

Del. quantity

cm3/1000 strokes : 95.0

Tolerance

cm3/1000 strokes : 30.0

Shutoff solenoid

Volt : 24

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 6.9

Dimension K mm : 3,6
Tolerance mm : +-0,1
Dimension KF mm : 6,4
Tolerance mm : +-0,2
MS1 dimension mm : 1,75

Tolerance mm : +0,15/-0,1

# CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,9..39,9

Control lever

position YB mm : 39,0..47,0

	+				
BOSCH INJ. PUMP TEST SPECIFICATION	ons 🕂	Rated speed rpm	:	1000	
Nichola a combina	†	Aneroid pressure		4000	
Note remarks	Í	hPa	:	1000	
Refer to Service Info for test a	nd 🗜	Setting mm	:	1.6	
adjustment instructions.	+	Tolerance mm	:	0.2	
See microcard(s) W400/	+	Shutoff solenoid			
- 11.1	+	Volt	:	24	
Edition : 05.04.95 Test oil : ISO 4113	†	CUDDLY DUMP DOCC	CLIDE		
rest oil : 150 4115	I	SUPPLY PUMP PRES	SUKE		
Part no. : 0 460 424 07	5A 🗼	Rated speed rpm	:	1000	
Pump designation : VE4/12F1350R		Aneroid pressure			
	+	hPa	:	1000	
Combana and information	+	Catting hos		4.7	
Customer-spec. information	†	Setting hPa Tolerance hPa	:	0.3	
Customer : IVECO-FIAT Motor : 8040.25x.4000	n Î	Shutoff solenoid	•	0.3	
. 6040.23%.4000	Ī	Volt		24	
		VOCC	•	C T	
TEST BENCH REQUIREMENTS	<u>†</u>	FULL-LOAD DELIVER	RY WI	TH BOOST	PRESSURE
Calibrating-oil	Ţ	Rated speed rpm	:	700	
return	1	Aneroid pressure			
temperature °C : 45 Tolerance °C : 1	+	hPa	:	1000	
Tolerance *C : 1	+	Del. quantity			
	+	cm3/1000 strokes	:	70.0	
Overflow	+	Tolerance			
restriction mm : 0.55	†	cm3/1000 strokes	:	0.5	
	†	Spread		3.5	
Inlet press. bar : 0.35	Ī	cm3/1000 strokes Check tolerance	•	3.3	
Tolerance bar : 0.05	I	cm3/1000s.	•	5.0	
roter arise bar . 0.05	1	Shutoff solenoid		3.0	
	1	Volt	:	24	
Test nozzle holde	+				
assembly : 1 688 901 027	7 +	FULL-LOAD DELIV.	WITH	OUT BOOST	PRESSURE
	+				
Opening pressure	+	Rated speed rpm	:	600	
bar : 250 Tolerance bar : 3	†	Del. quantity cm3/1000 strokes		46.0	
Tolerance bar : 3	Ī	Tolerance	•	40.0	
	I	cm3/1000 strokes	•	0.5	
Test lines : 1 680 750 073	3 ↓	Shutoff solenoid	•	0.5	
	1	Volt	:	24	
Outside diameter : 6.00	+	Check tolerance			
	+	cm3/1000s.	:	5.0	
x inside diameter : 2.00	+				
x length mm : 450	+	IDLE SETTING			
	†	Dated anach		350	
DEMADKS		Rated speed rpm Del. quantity	:	∪رر	
REMARKS	I	cm3/1000 strokes		15.0	
	I	Tolerance	•	12.0	
	1	cm3/1000 strokes	:	2.0	
	↓	Shutoff solenoid	•		
INJECTION PUMP SETTING VALUES	+	Volt	:	24	
	+	Spread			
TIMING DEVICE TRAVEL	+	cm3/1000 strokes	:	3.5	
	•				

Check tolerance			+	Tolerance hPa	:	0.3	
cm3/1000s.	:	5.0	1	Shutoff solenoid Volt		24	
			+	VOCC	•		
FULL-LOAD SPEED F	REGU	JLATION	†	Rated speed rpm	:	600	
Rated speed rpm	:	1525	I	Aneroid pressure hPa	:	1000	
Pressure hPa	:	1000	+	Supply pomp	•		
Del. quantity		33.0	†	pressure bar Tolerance hPa	:	4.0 0.3	
cm3/1000 strokes Tolerance	:	55.0	I	Shutoff solenoid	•	υ. 5	
cm3/1000 strokes	:	3.0	+	Volt	:	24	
Shutoff solenoid Volt		24	†	OVERFLOW QUANTITY			
VOLL	•	24	Į	OVERTEUM GUMINITIT			
STARTING FUEL DEL	IVE	ERY	+	Rated speed rpm	:	1350	
Rated speed rpm	:	100	1	Aneroid pressure hPa		1000	
Del. quantity	•	100	Ţ	Overflow quantity	•	1000	
cm3/1000 strokes	:	95.0	+	ccm/10s	:	97.2	
Tolerance cm3/1000 strokes		30.0	†	Tolerance ccm/10s		41.6	
Shutoff solenoid	•	JU.U	Į	CCIII/ 105	•	41.0	
Volt	:	24	+	Check tolerance			
			†	ccm/10s Shutoff solenoid	:	41.6	
			I	Volt	:	24	
			+				
INJECTION-PUMP TE	CT	SPECIFICATIONS	— <u>†</u>	Rated speed rpm Aneroid pressure	:	600	
TIMECITON-LONE IE	.51	SPECIFICATIONS	Į	hPa	:	1000	
TIMING DEVICE CHA	RAC	CTERISTIC	+	Overflow quantity			
Rated speed rpm	:	1100	İ	ccm/10s Tolerance	:	63.8	
Aneroid pressure	•	1100	Ţ	ccm/10s		22.2	
hPa	:	1000	+				
Tolerance mm Check	:	0.4	†	Check tolerance ccm/10s		22.2	
tolerance mm	:	0.9	Ţ	Shutoff solenoid	•	۷۵.۵	
Shutoff solenoid		•	+	Volt	:	24	
Volt	:	24	1	DELIVERY AND BREAK	∠∆IJ∆	Υ (ΗΔΦΔΟ	TERISTIC
Rated speed rpm	:	1350	Ţ	PECTACUL MAD DUCAL	\/\#/\	1 CHARAC	CUTOLIC
Aneroid pressure			+	Rated speed rpm	:	1525	
hPa	:	1000	1	Aneroid pressure hPa	•	1000	
SV travel mm	:	4.1	Į	Del. quantity	•	1000	
Tolerance mm	:	0.4	+	cm3/1000 strokes	:	33.0	
Check tolerance mm		0.9	1	Tolerance cm3/1000 strokes	•	3.0	
Shutoff solenoid	•	U. 7	Į	Check tolerance	•	٠.٠	
Volt	:	24	+	cm3/1000s.	:	6.0	
SUPPLY PUMP PRESS	IPF	CHARACTERISTIC	1	Shutoff solenoid Volt	•	24	
OUTEL FORE TRESS	UNL		+		•		
Rated speed rpm	:	1350	†	Rated speed rpm	:	1475	
Aneroid pressure hPa	•	1000	I	Aneroid pressure hPa	:	1000	
Supply pomp	•		+	Del. quantity	•		
pressure bar	:	8.0	+	cm3/1000 strokes	:	50.0	

Tolerance cm3/1000 strokes	:	4.0	‡	Aneroid pressure hPa	:	1000	
Check tolerance cm3/1000s.		10.0	+	Del. quantity cm3/1000 strokes	:	75.5	
Shutoff solenoid Volt	:	24	‡	Tolerance cm3/1000 strokes	:	2.0	
Rated speed rpm Aneroid pressure	:	1610	†	Check tolerance cm3/1000s. Shutoff solenoid	:	3.5	
hPa Del. quantity	:	1000	<u> </u>	Volt	:	24	
cm3/1000 strokes Tolerance	:	1.5	+	Rated speed rpm Aneroid pressure		700	
cm3/1000 strokes Check tolerance	:	1.5	+	hPa Del. quantity	:	1000	
cm3/1000S. Shutoff solenoid	:	1.5	‡	cm3/1000 strokes Tolerance		70.0	
Volt	:	24	†	cm3/1000 strokes Check tolerance	:	0.5	
Rated speed rpm Aneroid pressure hPa	:	600 375	<u>†</u>	cm3/1000S. Shutoff solenoid Volt	:	3.5 24	
LDA/	•	313	-	VOCE	•	24	
HBA stroke mm Del. quantity	:	6.0	+	ELECTR. SHUTOFF			
cm3/1000 strokes Tolerance		64.5	+	CONTROL LEVER, ID			
cm3/1000 strokes Check tolerance	:	0.5	‡	Rated speed rpm Del. quantity			
cm3/1000s. Shutoff solenoid	:	4.0	‡	cm3/1000 strokes Tolerance		1.5	
Volt Rated speed rpm	:	24 1350	<u>†</u>	cm3/1000 strokes Check tolerance cm3/1000s.	:	1.5 1.5	
Aneroid pressure	•	1000	1	Spread cm3/1000 strokes	•	5.0	
Del. quantity cm3/1000 strokes	:	62.0	+	FULL-LOAD STOP CO			
Tolerance cm3/1000 strokes	:	1.5	+	Rated speed rpm	:	350	
Check tolerance cm3/1000S.	:	3.5	‡	Del. quantity cm3/1000 strokes	:	1.5	
Shutoff solenoid Volt	:	24	†	Tolerance cm3/1000 strokes Spread	:	1.5	
Rated speed rpm Aneroid pressure	:	1200	Ī	cm3/1000 strokes Check tolerance	:	5.0	
hPa Del. quantity	:	1000	+	cm3/1000s.	:	1.5	
cm3/1000 strokes Tolerance	:	65.0	‡	cm3/1000 strokes	:	5.0	
cm3/1000 strokes Check tolerance	:	2.0	‡	IDLE DELIVERY		.=-	
cm3/1000s. Shutoff solenoid	:	3.5	‡	Rated speed rpm Del. quantity	:	475	
Volt	:	24	‡	cm3/1000 strokes Tolerance		1.5 1.5	
Rated speed rpm	:	600	Į	cm3/1000 strokes	•	1.5	

Check tolerance 1.5 cm3/1000s. Shutoff solenoid 24 Volt START TRANSITION Rated speed rpm 250 Del. quantity 55.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : 10.0 Shutoff solenoid 24 Volt 130 Rated speed rpm Del. quantity cm3/1000 strokes : 95.0 Tolerance cm3/1000 strokes : 30.0 Shutoff solenoid Volt 24 ASSEMBLY AND ADJUSTMENT DIMENSIONS LDA/ HBA stroke mm 6.0 : 3,6 Dimension K mm : +-01 Tolerance mm Dimension KF mm : 6,4 : +-0,2 Tolerance mm MS1 dimension mm : 1,75 Tolerance mm : +0,15/-0,1 CONTROL LEVER POSITION SET Control lever position YA mm : 37,9..39,9 Control lever : 42,0..50,0 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 26.07.94 Edition : ISO 4113 Test oil

: 0 460 494 271 Part no. Pump designation : VE4/9F2200R412

Customer-spec. information

: NISSAN-MISA Customer : LD 20 II-E (PF) Motor

Power KW 46.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance \*C

Overflow

restriction mm 0.55

Inlet press. bar : 0.35

Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar 130 Tolerance bar

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840

**REMARKS** 

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0 Tolerance mm : +-0,02

Outlet

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200

3.5 Setting mm Tolerance mm 0.2

Shutoff solenoid

Volt 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm 1200

Setting hPa : 5.4 Tolerance hPa 0.3 Shutoff solenoid

Volt 12

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 2200

Del. quantity

cm3/1000 strokes : 33.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

12 Volt

KSB/AFB Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

500 Rated speed rpm

Del. quantity

cm3/1000 strokes : 3.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

KSB/AFB Volt 12

FULL-LOAD SPEED REGULATION

K16

Rated speed rpm : 2600	+ Shutoff solenoid
Del. quantity	† Volt : 12
cm3/1000 strokes : 15.0	† (OD (ASD. W.))
Tolerance cm3/1000 strokes : 3.0	+ KSB/AFB Volt : 12
Shutoff solenoid	T
Volt : 12	INJECTION-PUMP TEST SPECIFICATIONS
1011	+
KSB/AFB Volt : 12	TIMING DEVICE CHARACTERISTIC
	+
	+ Rated speed rpm : 1800
SET GRADUATED STARTING DELIVERY	+
CONTROL LEVER, IDLE STOP	+ SV travel mm : 6.4
Rated speed rpm : 100	+ Tolerance mm : 0.4 + Check
Rated speed rpm : 100 Del. quantity	tolerance mm : 0.7
cm3/1000 strokes : 50.0	Shutoff solenoid
Tolerance	+ Volt : 12
cm3/1000 strokes : 2.0	+
Shutoff solenoid	+ KSB/AFB Volt : 12
Volt : 12	+
	+ Rated speed rpm : 900
KSB/AFB Volt : 12	† Sv + 1 0
	+ SV travel mm : 1.9 + Tolerance mm : 0.4
LOAD-DEPENDENT START OF DELIVERY	+ Check
SETTING	tolerance mm : 0.7
	+ Shutoff solenoid
DELIVERY DIFFERENCE	+ Volt : 12
	+
Rated speed rpm : 900	+ KSB/AFB Volt : 12
Del. quantity	+
cm3/1000 strokes : -9.0	+ Rated speed rpm : 2200
Tolerance cm3/1000 strokes : 1.0	+ SV travel mm : 8.1
cm3/1000 strokes : 1.0 Shutoff solenoid	+ SV travel mm : 8.1 + Tolerance mm : 0.4
Volt : 12	Check
, , , ,	tolerance mm : 0.5
KSB/AFB Volt : 12	+ Shutoff solenoid
	+ Volt : 12
PRESSURE DIFFERENCE	+
200	+ KSB/AFB Volt : 12
Rated speed rpm : 900	CURRY DIME PRESSURE CHARACTERISTIC
Del. quantity cm3/1000 strokes : -0.2	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
Tolerance	Rated speed rpm : 1800
cm3/1000 strokes : 0.1	+ Supply pomp
Shutoff solenoid	pressure bar : 7.1
Volt : 12	† Tolerance hPa : 0.3
	+ Shutoff solenoid
KSB/AFB Volt : 12	+ Volt : 12
	+ + KSB/AFB Volt : 12
TIMING BELITOE TOALIEL BIEFERENCE	
TIMING-DEVICE TRAVEL DIFFERENCE	+ KSB/AFB Volt : 12
	+
Rated speed rpm : 900	Rated speed rpm : 900
Rated speed rpm : 900 Del. quantity	Rated speed rpm : 900 Supply pomp
Rated speed rpm : 900	Rated speed rpm : 900
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.8	Rated speed rpm : 900 Supply pomp pressure bar : 4.5

			•	Charle talanana		
KSB/AFB Volt	:	12	1	Check tolerance cm3/1000s.	:	5.5
	•		+	Shutoff solenoid	·	
Rated speed rpm	:	2200	+	Volt	:	12
Supply pomp pressure bar		8.2	Ī	KSB/AFB Volt	:	12
Tolerance hPa	:	0.3	1	KOD/AID VOCC	•	12
Shutoff solenoid		4.0	+	Rated speed rpm	:	2950
Volt	:	12	†	Del. quantity cm3/1000 strokes	:	2.5
KSB/AFB Volt	:	12	Ţ	Tolerance	•	2.5
			+	cm3/1000 strokes	;	2.5
OVERFLOW QUANTITY			†	Check tolerance cm3/1000s.		2.5
Rated speed rpm	:	2200	I	Shutoff solenoid	•	۵,5
Overflow quantity			+	Volt	:	12
ccm/10s	:	97.2	†	KSB/AFB Volt		12
Tolerance ccm/10s	•	41.6	Ī	NOB/AFB VOLL	•	12
COM/ 103	•		+	Rated speed rpm	:	900
Check tolerance		14 (	+	Del. quantity		70 /
ccm/10s Shutoff solenoid	:	41.6	Ī	cm3/1000 strokes Tolerance	:	30.4
Volt	:	12	1	cm3/1000 strokes	:	1.5
		40	+	Check tolerance		2.5
KSB/AFB Volt	:	12	İ	cm3/1000S. Shutoff solenoid	:	2.5
Rated speed rpm	:	600	1	Volt	:	12
Overflow quantity			+			
ccm/10s	:	63.8	1	KSB/AFB Volt	:	12
Tolerance ccm/10s	:	22.2	I	Rated speed rpm	:	1200
			+	Del. quantity		
Check tolerance ccm/10s		22.2	†	cm3/1000 strokes Tolerance	:	32.5
Shutoff solenoid	•	22.2	Į	cm3/1000 strokes	:	1.5
Volt	:	12	+	Check tolerance		
MODIATO Vala		12	†	cm3/1000S. Shutoff solenoid	:	2.5
KSB/AFB Volt	:	12	Ī	Volt	:	12
DELIVERY AND BREAK	KAWA	Y CHARACTERISTI	c <del> </del>			
Dodad susad mass	_	2600	†	KSB/AFB Volt	:	12
Rated speed rpm Del. quantity	:	2000	Į	Rated speed rpm	:	1800
cm3/1000 strokes	:	15.0	+	Del. quantity		
Tolerance	_	3.0	†	cm3/1000 strokes Tolerance	:	32.6
cm3/1000 strokes Check tolerance	:	3.0	I	cm3/1000 strokes	:	1.0
cm3/1000s.	:	4.5	+	Check tolerance	-	
Shutoff solenoid		12	+	cm3/1000s.	:	2.5
Volt	:	12	Ī	Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12	+			_
Ordered award man		2350	†	KSB/AFB Volt	:	12
Rated speed rpm Del. quantity	:	2370	Ţ	Rated speed rpm	:	600
cm3/1000 strokes	:	30.0	+	Del. quantity		
Tolerance cm3/1000 strokes		4.0	1	cm3/1000 strokes Tolerance	:	31.1
CHD/ 1000 SCIUNES	•	7.0	1	cm3/1000 strokes	:	1.5
			•			

Chaple talanana		1 0-			
Check tolerance	2 5	4 2	pread		5.0
cm3/1000s.	: 2.5		m3/1000 strokes	:	5.0
Shutoff solenoid		+ CH	heck tolerance		
Volt	: 12	<u>+</u> cr	m3/1000s.	:	1.5
		1	pread		. 🕶
KSB/AFB Volt	: 12		m3/1000 strokes		5.0
KODYAID VOLE	• 12	T	שאטו זנו טעפט	•	٥.0
	2225	Τ			
Rated speed rpm	: 2200	† KS	SB/AFB Volt	:	12
Del. quantity		+			
cm3/1000 strokes	: 33.0	+			
Tolerance		+			
cm3/1000 strokes	: 0.5	1			
Check tolerance	• • • • • • • • • • • • • • • • • • • •	1			
cm3/1000s.	: 1.3	1 _			
	•	Ť -	IFOLIANO LOAD DE		
Shutoff solenoid			HECKING LOAD-DEF		1
Volt	: 12	+ S1	TART OF DELIVERY	Y	
		+			
		————— → DE	ELIVERY DIFFEREN	VCE	
MECHANICAL SHUTOR	. Ł	$\perp$			
	•	ءِم ل	ated speed rpm	:	900
Datasi anassi sun	. 2200			•	700
Rated speed rpm	: 2200		el. quantity		40. /
Del. quantity			n3/1000 strokes	:	-10.6
cm3/1000 strokes	: 1.5		olerance		
Tolerance		+ cn	m3/1000 strokes	:	2.0
cm3/1000 strokes	: 1.5	∔ c⊦	neck tolerance		
Spread	•		m3/1000s.	•	2.0
cm3/1000 strokes	: 5.0		nutoff solenoid	•	2.0
	. ,			_	13
Check tolerance	4 -	† vc	olt	•	12
cm3/1000s.	: 1.5	†			
Spread		+ KS	SB/AFB Voit	:	12
cm3/1000 strokes	: 5.0	+			
Shutoff solenoid			MING-DEVICE TRA	AVEL D	IFFERENCE
Volt	: 12	1			
	• •	. ↓ Ra	ated speed rpm	:	900
KSB/AFB Volt	: 12		el. quantity	•	700
KSB/AFB VOLE	. 12			_	0.0
			n3/1000 strokes	•	-0.8
			olerance		
ELECTR. SHUTOFF			n3/1000 strokes	:	0.1
CONTROL LEVER, ID	LE STOP		neck tolerance		
		+ cm	n3/1000s.	:	0.1
Rated speed rpm	: 350		nutoff solenoid		
Del. quantity			olt	•	12
cm3/1000 strokes	: 1.5	1	,	•	
Tolerance	. (.)	Tvo	SB/AFB Volt		12
	4 5	T ^3	DATE VOLL	•	12
cm3/1000 strokes	: 1.5	†			
Check tolerance		† DE	ELIVERY DIFFEREN	1CE	
cm3/1000s.	: 1.5	+			
Spread		+ Ra	ited speed rpm	:	900
cm3/1000 strokes	: 5.0		el. quantity		
	•		3/1000 strokes	:	5.0
KSB/AFB Volt	: 12	· ·	lerance	•	<b>5.0</b>
NOD/AFD VOLL	, 14		3/1000 strokes		3.0
				•	3.0
FULL-LOAD STOP CO	NTROL LEVER		eck tolerance		
	_		3/1000s.	:	3.0
Rated speed rpm	: 350		utoff solenoid		
Del. quantity		∔ vo	elt	:	12
cm3/1000 strokes	: 1.5	1			
Tolerance		1 Kg	B/AFB Volt	•	12
	: 1.5	T ~3	STAIS VOLL	•	· C
CM3/ TOOU STROKES	: 1.5	Τ +-	MINO DOUTOR TOA	VEI 6:	TETTOTNOT
		+ 11	MING-DEVICE TRA	IVEL D	TELEKENTE

900 Rated speed rpm -0.8SV travel mm : Tolerance mm 0.5 Check 0.5 tolerance mm Shutoff solenoid Volt 12 KSB/AFB Volt 12 START TRANSITION Rated speed rpm 340 Del. quantity 35.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : 10.0 Shutoff solenoid Volt 12 12 KSB/AFB Volt

Rated speed rpm : 210
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm : +-0,1 : 5,8 Dimension KF mm : +-0,2 Tolerance mm Dimension MS mm : 1,2 : +-0,2 Tolerance mm : 6,0 KSB travel mm : 3,7 TLA travel mm

CONTROL LEVER POSITION SET

Control lever

position YA mm : 30,8..34,8

Control lever

position YB mm : 67,4..78,6

Note remarks

Refer to Service Info for test and edjustment instructions.
See microcard(s) W400/...

Edition : 25.04.94 Test oil : ISO 4113

Part no. : 0 460 494 299 Pump designation : VE4/9F2350R452

Customer—spec. information Customer : RENAULT Motor : J8S - 784

TEST BENCH REQUIREMENTS

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1125

Setting mm : 2.8 Tolerance mm : 0.2

Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1125

Setting hPa : 4.5 Tolerance hPa : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1125

Del. quantity

cm3/1000 strokes : 36.7

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550

Del. quantity

cm3/1000 strokes : 6.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes: 3.0

Shutoff solenoid

Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 72.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid

Volt : 12

LOAD-DEPENDENT START OF DELIVERY

SETTING

DELIVERY DIFFERENCE

Rated speed rpm Del. quantity	:	1125	+ Rated speed rpm : + Supply pomp	800
cm3/1000 strokes Tolerance	:	-11.0	pressure bar : Tolerance hPa :	3.4 0.3
cm3/1000 strokes Shutoff solenoid	:	1.0	Shutoff solenoid Volt :	12
Volt	:	12	OVERFLOW QUANTITY	12
PRESSURE DIFFEREN	VCE		+	2250
Rated speed rpm	:	1125	Rated speed rpm : Overflow quantity	97.2
Del. quantity cm3/1000 strokes	:	-0.2	ccm/10s : Tolerance	
Tolerance cm3/1000 strokes		0.1	+	41.6
Shutoff solenoid Volt	:	12	+ Check tolerance + ccm/10s :	41.6
TIMING-DEVICE TRA	WEL	DIFFERENCE	+ Shutoff solenoid + Volt :	12
Rated speed rpm Del. quantity	:	1125	Rated speed rpm : Overflow quantity	800
cm3/1000 strokes Tolerance	:	-0.6	+ ccm/10s :	63.8
cm3/1000 strokes Shutoff solenoid	:	0.1	ccm/10s :	22.2
Volt	:	12	Check tolerance ccm/10s	22.2
TALLECTION DUMP TO	CT		+ Shutoff solenoid	12
INJECTION-PUMP TE	:51	SPECIFICATIONS	+ Volt :	12
TIMING DEVICE CHA			DELIVERY AND BREAKAN	
	RAC	TERISTIC	DELIVERY AND BREAKAN Rated speed rpm :	WAY CHARACTERISTIC
TIMING DEVICE CHA Rated speed rpm SV travel mm	RAC	TERISTIC 2000 7.5	DELIVERY AND BREAKAN  Rated speed rpm :  Del. quantity  cm3/1000 strokes :	AY CHARACTERISTIC 2500
TIMING DEVICE CHARATED SPEED TOTAL  SV travel mm Tolerance mm Check	RAC	7.5 0.4	DELIVERY AND BREAKAN  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes :	AY CHARACTERISTIC 2500
TIMING DEVICE CHARACTER Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	RAC	7.5 0.4 0.7	DELIVERY AND BREAKAN  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. :	2500 23.0
TIMING DEVICE CHARACTER Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	RAC	7.5 0.4 0.7	DELIVERY AND BREAKAN  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes : Check tolerance	2500 23.0 3.0
TIMING DEVICE CHARATED SPEED TO THE TOTAL	RAC	7.5 0.4 0.7 12	DELIVERY AND BREAKAN  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. : Shutoff solenoid Volt : Rated speed rpm :	2500 23.0 3.0 4.0
TIMING DEVICE CHARATED SPEED TOTAL  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm	: : : :	7.5 0.4 0.7	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. : Shutoff solenoid Volt : Rated speed rpm : Del. quantity cm3/1000 strokes :	2500 23.0 3.0 4.0
TIMING DEVICE CHAR Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm	: : : :	7.5 0.4 0.7 12 800 1.1	DELIVERY AND BREAKAN  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000strokes: Check tolerance cm3/1000s. Shutoff solenoid Volt:  Rated speed rpm: Del. quantity cm3/1000 strokes: Check tolerance cm3/1000s.:	2500 23.0 3.0 4.0 12
TIMING DEVICE CHAR Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check	: : : :	7.5 0.4 0.7 12 800 1.1 0.4	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. : Shutoff solenoid Volt : Rated speed rpm : Del. quantity cm3/1000 strokes : Check tolerance	2500 23.0 3.0 4.0 12 2650 6.5
TIMING DEVICE CHAR Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000strokes : Check tolerance cm3/1000s. : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Check tolerance cm3/1000s strokes : Check tolerance cm3/1000s : Shutoff solenoid Volt :  Rated speed rpm :	2500 23.0 3.0 4.0 12 2650 6.5 5.0
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS Rated speed rpm	: : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000s. : Check tolerance cm3/1000s. : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Check tolerance cm3/1000s. : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000s. : Shutoff solenoid Volt :	2500 23.0 3.0 4.0 12 2650 6.5 5.0
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Supply PUMP PRESS  Rated speed rpm Supply pomp pressure bar	: : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000 6.8	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000s. : Check tolerance cm3/1000s. : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Check tolerance cm3/1000s. : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000s. : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000s. : Tolerance cm3/1000 strokes : Tolerance cm3/1000 strokes :	2500 23.0 3.0 4.0 12 2650 6.5 5.0 12 2750
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm Supply pomp	: : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000	Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000s. : Check tolerance cm3/1000s. : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Check tolerance cm3/1000s. : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000s. : Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance	2500 23.0 3.0 4.0 12 2650 6.5 5.0 12 2750 2.5

			1			
Rated speed rpm	:	2250	Į			
Del. quantity		7/ 2	+	CHECKING LOAD-DE		ENT
cm3/1000 strokes Tolerance	:	36.2	<u>†</u>	START OF DELIVER	Y	
cm3/1000 strokes	:	1.0	I	DELIVERY DIFFERE	VCE	
Check tolerance	•		+			
cm3/1000s.	:	2.3	+	Rated speed rpm	:	1125
Shutoff solenoid Volt		12	†	Del. quantity cm3/1000 strokes		-13.0
VOLT	•	12	<u> </u>	Tolerance	•	-13.0
Rated speed rpm	:	1750	+	cm3/1000 strokes	:	2.0
Del. quantity			+	Check tolerance		
cm3/1000 strokes	;	35.9	†	cm3/1000s.	:	2.0
Tolerance cm3/1000 strokes		1.0	Ī	Shutoff solenoid Volt	•	12
Check tolerance	•	1.0	Ţ	VOCC	•	12
cm3/1000S.	:	2.3	+	TIMING-DEVICE TRA	AVEL	DIFFERENCE
Shutoff solenoid		40	+			4425
Volt	:	12	†	Rated speed rpm Del. quantity	:	1125
Rated speed rpm	:	800	I	cm3/1000 strokes	:	-0.6
Del. quantity			+	Tolerance		
cm3/1000 strokes	:	35.2	+	cm3/1000 strokes	:	0.1
Tolerance		1.5	†	Check tolerance cm3/1000s.		0.1
cm3/1000 strokes Check tolerance	•	1,5	Ī	Shutoff solenoid	•	0.7
cm3/1000s.	:	2.3	1	Volt	:	12
Shutoff solenoid			+			
Volt	:	12	†	DELIVERY DIFFEREN	<b>√CE</b>	
Rated speed rpm	:	1125	1	Rated speed rpm	:	1125
Del. quantity	•	1125	Ţ	Del. quantity	•	1123
cm3/1000 strokes	:	36.7	+	cm3/1000 strokes	:	5.0
Tolerance		0.5	+	Tolerance		7.0
cm3/1000 strokes	:	0.5	†	cm3/1000 strokes Check tolerance	:	3.0
Check tolerance cm3/1000S.	•	2.3	Ī	cm3/1000s.	•	3.0
Shutoff solenoid	•	2.5	1	Shutoff solenoid	•	3.0
Volt	:	12	<del> </del>	Volt	:	12
			†	TIMINO REUTOE TO		NICEPPANCE
			<u> </u>	TIMING-DEVICE TRA	IVEL	DIFFERENCE
ELECTR. SHUTOFF			Į	Rated speed rpm	:	1125
CONTROL LEVER, ID	LE ST	OP	+	Tolerance mm		0.2
• · · · · · · · · · · · ·		/ 25	+	Check	_	0.7
Rated speed rpm Del. quantity	:	425	†	tolerance mm Shutoff solenoid	:	0.3
cm3/1000 strokes	:	1.5	Ī	Volt	:	12
Tolerance	•		+	- <del>- • • •</del>	•	· <del>-</del>
cm3/1000 strokes	:	1.5	+	<b></b>		
Check tolerance		1.5	†	EXHAUST-GAS RECIR	CUL	AIION
cm3/1000s.	:	1.5	Ī	Rated speed rpm	•	1000
			Ī	Del. quantity		
			+	cm3/1000 strokes	:	24.0
			†	Tolerance		0 5
			<b>†</b>	cm3/1000 strokes Check tolerance	:	0.5
			Į	cm3/1000s.	:	2.5
			'		-	_ · •

Shutoff solenoid 12 Volt START TRANSITION 310 Rated speed rpm Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 strokes : 10.0 Shutoff solenoid 12 Volt Rated speed rpm 210 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 20.0 Shutoff solenoid 12 Volt ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : 3,3 Tolerance mm : +-0,1 Dimension KF mm : 5,5 : +-0,2 Tolerance mm : 1,5 Dimension MS mm Tolerance mm : +-0,2 POTENTIOMETER SET 2. measurement : ARF 12,0 voltage Volt MICROSWITCH SET : 0,8..3,0 mm : 11,6..12,4 CONTROL LEVER POSITION SET Control lever position YA mm : 37,8..41,8 Control lever : 41,9..52,1 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 25.04.94 Edition Test oil : ISO 4113

Part no. : 0 460 494 300 Pump designation: VE4/9F2350R452-1

Customer-spec. information Customer : RENAULT : J8S - 784 CA Motor

TEST BENCH REQUIREMENTS

Inlet press. bar : 0.35 Tolerance bar :

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1125

Setting mm 0.2 Tolerance mm :

Shutoff solenoid

Volt 12 SUPPLY PUMP PRESSURE

Rated speed rpm : 1125

Setting hPa 4.5 Tolerance hPa 0.3

Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1125

Del. quantity

cm3/1000 strokes : 36.7

Tolerance

cm3/1000 strokes : 0.5

Spread

2.5 cm3/1000 strokes :

Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550

Del. quantity

cm3/1000 strokes : 6.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

2500 Rated speed rpm

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

3.0 cm3/1000 strokes :

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

100 Rated speed rpm :

Del. quantity

72.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid

12 Volt

LOAD-DEPENDENT START OF DELIVERY

SETTING

DELIVERY DIFFERENCE

Rated speed rpm	:	1125	+	Rated speed rpm	:	800	
Del. quantity			+	Supply pomp			
cm3/1000 strokes	:	-11.0	+	pressure bar	:	3.4	
Tolerance			+	Tolerance hPa	:	0.3	
cm3/1000 strokes	:	1.0	+	Shutoff solenoid			
Shutoff solenoid			+	Volt	:	12	
Volt	:	12	1				
			1	OVERFLOW QUANTITY			
PRESSURE DIFFEREN	<b>ICE</b>		1				
			1	Rated speed rpm	:	2250	
Rated speed rpm	:	1125	į.	Overflow quantity			
Del. quantity			1	ccm/10s	:	97.2	
cm3/1000 strokes	:	-0.2	1	Tolerance			
Tolerance			1	ccm/10s	:	41.6	
cm3/1000 strokes	:	0.1	1				
Shutoff solenoid			1	Check tolerance			
Volt	:	12	1	ccm/10s	:	41.6	
			1	Shutoff solenoid		,	
TIMING-DEVICE TRA	IVEL	DIFFERENCE	1	Volt	:	12	
			1		-		
Rated speed rpm	:	1125	1	Rated speed rpm	:	800	
Del. quantity	-		1	Overflow quantity			
cm3/1000 strokes	:	-0.6	1	ccm/10s	:	63.8	
Tolerance	·		1	Tolerance	•	33.3	
cm3/1000 strokes	:	0.1	1	ccm/10s	:	22.2	
Shutoff solenoid	•	•••	1		•	20.2	
Volt	:	12	1	Check tolerance			
7511	•	• •	1	ccm/10s	•	22.2	
		<del> </del>	<b></b> - ↓	Shutoff solenoid	•		
			T T				
INJECTION—PUMP TE	ST	SPECIFICATIONS	1	Volt	:	12	
INJECTION—PUMP TE	ST	SPECIFICATIONS	‡	Volt	:	12	
INJECTION—PUMP TE			+	Volt DELIVERY AND BREA	: <awa< td=""><td></td><td>ΓIC</td></awa<>		ΓIC
TIMING DEVICE CHA	RAC	TERISTIC	+ + + +	DELIVERY AND BREAK		NY CHARACTERIST	ΓIC
			† † †	DELIVERY AND BREAM	: <awa :</awa 	NY CHARACTERIST	LIC
TIMING DEVICE CHA	RAC	TERISTIC 2000	† † † †	DELIVERY AND BREAM Rated speed rpm Del. quantity	:	AY CHARACTERIST	LIC
TIMING DEVICE CHA Rated speed rpm SV travel mm	RAC	TERISTIC 2000 7.5	† † † †	DELIVERY AND BREAM Rated speed rpm Del. quantity cm3/1000 strokes	:	AY CHARACTERIST	LIC
TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm	RAC	TERISTIC 2000	+++++++++++++++++++++++++++++++++++++++	DELIVERY AND BREAM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	AY CHARACTERIST 2500 23.0	ΓIC
TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm Check	RAC :	TERISTIC 2000 7.5 0.4	+ + + + + + + + + + + + + + + + + + + +	DELIVERY AND BREAM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	AY CHARACTERIST	ΓIC
TIMING DEVICE CHARATED SPEED TO TOUR TOUR TOUR TOUR TOUR TOUR TOUR T	RAC	TERISTIC 2000 7.5	+++++++++++++++++++++++++++++++++++++++	DELIVERY AND BREAM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:	AY CHARACTERIST 2500 23.0 3.0	ΓIC
TIMING DEVICE CHARATED SPEED TO TOUR TOUR TOUR TOUR TOUR TOUR TOUR T	RAC :	TERISTIC 2000 7.5 0.4 0.7	+++++++++++++++++++++++++++++++++++++++	DELIVERY AND BREAM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	AY CHARACTERIST 2500 23.0	ric
TIMING DEVICE CHARATED SPEED TO TOUR TOUR TOUR TOUR TOUR TOUR TOUR T	RAC :	TERISTIC 2000 7.5 0.4	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	:	2500 23.0 3.0 4.0	ΓIC
TIMING DEVICE CHARated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	RAC :	TERISTIC 2000 7.5 0.4 0.7 12	+++++++++++++++++++++++++++++++++++++++	DELIVERY AND BREAM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	AY CHARACTERIST 2500 23.0 3.0	ΓIC
TIMING DEVICE CHARATED SPEED TO TOUR TOUR TOUR TOUR TOUR TOUR TOUR T	RAC :	TERISTIC 2000 7.5 0.4 0.7	+++++++++++++++++++++++++++++++++++++++	DELIVERY AND BREAM Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: : : : : :	2500 23.0 3.0 4.0	FIC
TIMING DEVICE CHARATED SPEED FOR TOUR SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm	RAC :	7.5 0.4 0.7 12	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm	:	2500 23.0 3.0 4.0	FIC
TIMING DEVICE CHARATED SPEED TO THE SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm	RAC :	7.5 0.4 0.7 12 800 1.1	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	2500 23.0 3.0 4.0 12	ric
TIMING DEVICE CHARATED SPEEd rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm  SV travel mm Tolerance mm	RAC :	7.5 0.4 0.7 12	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	2500 23.0 3.0 4.0	FILE
TIMING DEVICE CHARATED SPEED FOR TOLERANCE MAN Shutoff solenoid Volt  Rated speed rpm  SV travel man Tolerance man Check for the speed rpm  SV travel man Tolerance man Check	RAC :	7.5 0.4 0.7 12 800 1.1 0.4	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance	: : : : : : : : : : : : : : : : : : : :	2500 23.0 3.0 4.0 12 2650 6.5	FILE
TIMING DEVICE CHARATED SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	RAC :	7.5 0.4 0.7 12 800 1.1	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s.	: : : : : : : : : : : : : : : : : : : :	2500 23.0 3.0 4.0 12	LIC
TIMING DEVICE CHARATED SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	RAC :	7.5 0.4 0.7 12 800 1.1 0.4 0.7	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	2500 23.0 3.0 4.0 12 2650 6.5 5.0	LIC
TIMING DEVICE CHARATED SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	RAC :	7.5 0.4 0.7 12 800 1.1 0.4	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s.	: : : : : : : : : : : : : : : : : : : :	2500 23.0 3.0 4.0 12 2650 6.5	LIC
TIMING DEVICE CHARATED SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	2500 23.0 3.0 4.0 12 2650 6.5 5.0	LIC
TIMING DEVICE CHARATED SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	2500 23.0 3.0 4.0 12 2650 6.5 5.0	LIC
TIMING DEVICE CHARATED SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS	RAC : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	2500 23.0 3.0 4.0 12 2650 6.5 5.0 12	LIC
TIMING DEVICE CHAR Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS Rated speed rpm	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000s.	: : : : : : : : : : : : : : : : : : : :	2500 23.0 3.0 4.0 12 2650 6.5 5.0	FIC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm Supply pomp	RAC : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance		2500 23.0 3.0 4.0 12 2650 6.5 5.0 12 2750 2.5	FIC
Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS  Rated speed rpm Supply pomp pressure bar	RAC : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000 6.8	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes		2500 23.0 3.0 4.0 12 2650 6.5 5.0 12	FIC
TIMING DEVICE CHAR Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa	RAC : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance		2500 23.0 3.0 4.0 12 2650 6.5 5.0 12 2750 2.5 2.5	FIC
TIMING DEVICE CHAR Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa Shutoff solenoid	RAC : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000 6.8 0.3	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		2500 23.0 3.0 4.0 12 2650 6.5 5.0 12 2750 2.5	FILE
TIMING DEVICE CHAR Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  Rated speed rpm  SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt  SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa	RAC : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000 6.8	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance		2500 23.0 3.0 4.0 12 2650 6.5 5.0 12 2750 2.5	LIC

	0050	†
Rated speed rpm Del. quantity	: 2250	+ CHECKING LOAD-DEPENDENT
cm3/1000 strokes Tolerance	: 36.2	START OF DELIVERY
cm3/1000 strokes Check tolerance	: 1.0	DELIVERY DIFFERENCE
cm3/1000s. Shutoff solenoid	: 2.3	Rated speed rpm : 1125
Volt	: 12	+ Del. quantity + cm3/1000 strokes : -13.0
Rated speed rpm	: 1750	Tolerance cm3/1000 strokes : 2.0
Del. quantity cm3/1000 strokes	: 35.9	Check tolerance cm3/1000s. : 2.0
Tolerance cm3/1000 strokes	: 1.0	+ Shutoff solenoid + Volt : 12
Check tolerance cm3/1000s.	: 2.3	+ TIMING-DEVICE TRAVEL DIFFERENCE
Shutoff solenoid Volt	: 12	Rated speed rpm : 1125
Rated speed rpm		- Del. quantity - cm3/1000 strokes : -0.6
Del. quantity cm3/1000 strokes		Tolerance - cm3/1000 strokes : 0.1
Tolerance cm3/1000 strokes		Check tolerance cm3/1000s. : 0.1
Check tolerance		+ Shutoff solenoid
cm3/1000S. Shutoff solenoid	: 2.3	+ Volt : 12
Volt	: 12	+ DELIVERY DIFFERENCE
Rated speed rpm Del. quantity	: 1125	+ Rated speed rpm : 1125 + Del. quantity
cm3/1000 strokes Tolerance	: 36.7	- cm3/1000 strokes : 5.0 - Tolerance
cm3/1000 strokes Check tolerance	: 0.5	cm3/1000 strokes : 3.0 Check tolerance
cm3/1000s. Shutoff solenoid	: 2.3	- cm3/1000s. : 3.0 - Shutoff solenoid
Volt	: 12	Volt : 12
		TIMING-DEVICE TRAVEL DIFFERENCE
ELECTR. SHUTOFF CONTROL LEVER, ID	LE STOP	Rated speed rpm : 1125 Tolerance mm : 0.2 Check
Rated speed rpm	: 425	tolerance mm : 0.3  Shutoff solenoid
Del. quantity cm3/1000 strokes	: 1.5	Volt : 12
Tolerance cm3/1000 strokes	: 1.5	EVILALICE CAS DECEDEN ATTON
Check tolerance cm3/1000s.	: 1.5	+ EXHAUST-GAS RECIRCULATION
		Rated speed rpm : 1000  Del. quantity
		+ cm3/1000 strokes : 24.0 + Tolerance
		+ cm3/1000 strokes : 0.5 + Check tolerance
		+ cm3/1000s. : 2.5

Shutoff solenoid

Volt : 12

START TRANSITION

Rated speed rpm : 310

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 210

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,5
Tolerance mm : +-0,2
Dimension MS mm : 1,5
Tolerance mm : +-0,2

POTENTIOMETER

SET

2. measurement

voltage Volt : ARF 12,0

**MICROSWITCH** 

SET

mm : 0,8...3,0

: 11,6..12,4

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,8..41,8

Control lever

position YB mm : 41,9..52,1

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 07.07.95 Edition Test oil : ISO 4113

: 0 460 494 381 Part no. Pump designation : VE4/9F2050R452-3

Customer-spec, information Customer : RENAULT : J8S - 758 Motor 51.0 Power KM

TEST BENCH REQUIREMENTS

Calibrating oil

return

temperature \*C Tolerance °C

Overflow

restriction mm 0.55 •

Inlet press. bar : 0.350.05 Tolerance bar :

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1125

Setting mm 2.8 Tolerance mm 0.2 : Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1125

Setting hPa 4.5 Tolerance hPa 0.3 Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

2.5

Rated speed rpm : 1125

Del. quantity

cm3/1000 strokes : 35.7

Tolerance

cm3/1000 strokes : 0.5

Spread cm3/1000 strokes :

Shutoff solenoid

12 Volt

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 4.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2200

Del. quantity

cm3/1000 strokes : 20.0

Tolerance

c:.3/1000 strokes : 3.0

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 72.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid Volt	;	12	‡	SUPPLY PUMP PRESS	URE	CHARACTERISTIC
			1	Rated speed rpm Supply pomp	:	2000
LOAD-DEPENDENT ST	ART	OF DELIVERY	1	pressure bar	•	6.8
SETTING	****	OI DECITERI	1	Tolerance hPa	:	0.3
26111149			T		•	0.5
			<b>†</b>	Shutoff solenoid		4.4
DELIVERY DIFFEREN	ICE		+	Volt	:	12
			+			
Rated speed rpm	:	1125	+	Rated speed rpm	:	800
Del. quantity			1	Supply pomp		
cm3/1000 strokes		-11.0	1	pressure bar	•	3.4
Tolerance	•	11.0	1	Tolerance hPa	:	0.3
		1.0	T	Shutoff solenoid	•	0.5
cm3/1000 strokes	•	1.0	<b>T</b>			45
Shutoff solenoid		4-	+	Volt	:	12
Volt	:	12	+			
			+	OVERFLOW QUANTITY		
PRESSURE DIFFEREN	CE		<b>1</b>			
	-		1	Rated speed rpm	:	2000
Rated speed rpm	:	1125	1	Overflow quantity		2000
	•	1123	T	ccm/10s		97.2
Del. quantity		0.0	T		•	71.2
cm3/1000 strokes	:	-0.2	†	Tolerance		
Tolerance			†	ccm/10s	:	41.6
cm3/1000 strokes	:	0.1	+			
Shutoff salenoid			+	Check tolerance		
Volt	:	12	1	ccm/10s	:	41.6
			1	Shutoff solenoid		
TIMING-DEVICE TRA	VEL	DIFFERENCE	1	Volt		12
TIMING DEVICE THA	V	DITTERENCE	1	VOCE	•	12
Dated assed ass		1125	T	Dotted aread are		800
Rated speed rpm	:	1125	†	Rated speed rpm	:	800
Del. quantity			+	Overflow quantity		
cm3/1000 strokes	:	-0.6	+	ccm/10s	:	62.5
Tolerance			+	Tolerance		
cm3/1000 strokes	:	0.1	+	ccm/10s	:	22.2
Shutoff solenoid			1			
Volt		12	1	Check tolerance		
10(1	•	, _	1	ccm/10s	•	22.2
			T	Shutoff solenoid	•	
511.7077411 01110 77		20501570477010	Ť			12
INJECTION-PUMP TE	51 3	SPECIFICATIONS	Ť	Volt	:	12
			†			
TIMING DEVICE CHA	RAC:	TERISTIC	+	DELIVERY AND BREAK	(AWA	Y CHARACTERISTIC
			+			
Rated speed rpm	:	2000	+	Rated speed rpm	:	2200
			+	Del. quantity		
SV travel mm	:	7.5	+	cm3/1000 strokes	:	20.0
Tolerance mm	•	0.4	1	olerance		
Check	•		1	cm3/1000 strokes	:	3.0
tolerance mm	•	0.7	1	Check tolerance	•	3.0
	•	0.7	T	cm3/1000s.		4.0
Shutoff solenoid		12	T		•	4.0
Volt	:	12	†	Shutoff solenoid		43
			†	Volt	:	12
Rated speed rpm	:	800	+			
			+	Rated speed rpm	:	2350
SV travel mm	:	1.1	+	Del. quantity		
Tolerance mm	:	0.4	1	cm3/1000 strokes	:	6.5
Check	•	<b>,</b>	1	Check tolerance		
tolerance mm		0.7	1	cm3/1000s.	•	5.0
	•	0.7	Ι	Shutoff solenoid	•	J.U
Shutoff solenoid		12	T			12
Volt	•	12	Ť	Volt	•	16

			+ Tolerance			
Rated speed rpm		2450	+ cm3/1000 strok	٠.	1.5	
Del. quantity	•	2430	Check tolerance		1.5	
cm3/1000 strokes		2.5	- cm3/1000s.		1.5	
	•	2.5	•	•	1.5	
Tolerance		2.5	+ Spread + cm3/1000 strok		5.0	
cm3/1000 strokes	:	2.5	+ cm3/1000 strok	es :	5.0	
Check tolerance		2 -	T 7,11, 1045 0700	CONT	201 151152	
cm3/1000s.	:	2.5	+ FULL-LOAD STOP	CONTR	ROL LEVER	
Shutoff solenoid		40	†		400	
Volt	:	12	+ Rated speed rp		400	
Dakad saas Lasa		2000	+ Del. quantity		4 5	
Rated speed rpm	:	2000	+ cm3/1000 strok	es :	1.5	
Del. quantity		7/ 0	+ Tolerance		<b>4</b> F	
cm3/1000 strokes	:	34.8	+ cm3/1000 strok	es :	1.5	
Tolerance		4.0	+ Spread		~ ^	
cm3/1000 strokes	:	1.0	+ cm3/1000 strok		5.0	
Check tolerance		^ ~	+ Check tolerance	е	4 -	
cm3/1000s.	:	2.3	+ cm3/1000s.	:	1.5	
Shutoff solenoid		4.5	Spread			
Volt	:	12	+ cm3/1000 strok	es :	5.0	
			†			
Rated speed rpm	:	1750	+			
Del. quantity			t			
cm3/1000 strokes	:	34.9	†			
Tolerance			†			
cm3/1000 strokes	:	1.0	+			_
Check tolerance			+ CHECKING LOAD-		DENT	
cm3/1000s.	:	2.3	+ START OF DELIV	ERY		
Shutoff solenoid			+			
Volt	:	12	+ DELIVERY DIFFE	RENCE		
			+			
Rated speed rpm	:	800	+ Rated speed rpr	n:	1125	
Del. quantity			+ Del. quantity			
cm3/1000 strokes	:	34.2	+ cm3/1000 stroke	es :	-13.0	
Tolerance			+ Tolerance			
cm3/1000 strokes	:	1.5	+ cm3/1000 stroke		2.0	
Check tolerance			+ Check tolerance	9		
cm3/1000s.	:	2.3	+ cm3/1000s.	:	2.0	
Shutoff solenoid			+ Shutoff soleno	id		
Volt	:	12	+ Volt	:	12	
			+			
Rated speed rpm	:	1125	+ TIMING-DEVICE	FRAVEL	. DIFFERENCE	
Del. quantity			+			
cm3/1000 strokes	:	35.7	+ Rated speed rpm	n :	1125	
Tolerance			+ Del. quantity			
cm3/1000 strokes	:	0.5	+ cm3/1000 stroke	es :	-0.6	
Check tolerance			+ Tolerance			
cm3/1000S.	:	2.3	+ cm3/1000 stroke		0.1	
Shutoff solenoid			+ Check tolerance	9		
Volt	:	12	+ cm3/1000s.	:	0.1	
			+ Shutoff solenoi	id	4.4	
			† Volt	:	12	
			<u> </u>			
ELECTR. SHUTOFF			+ DELIVERY DIFFER	RENCE		
CONTROL LEVER, ID	LE S	TOP	<b>†</b>		4405	
		4.00	+ Rated speed rpm	n :	1125	
Rated speed rpm	:	400	+ Del. quantity		5.0	
Del. quantity			+ cm3/1000 stroke	es :	5.0	
cm3/1000 strokes	:	1.5	+ Tolerance		7.0	
			+ cm3/1000 stroke	es :	3.0	

Check tolerance

3.0 cm3/1000s.

Shutoff solenoid

12 Volt

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm 1125 Tolerance mm 0.2

Check

tolerance mm 0.3

Shutoff solenoid

12 Volt

EXHAUST-GAS RECIRCULATION

Rated speed rpm 1000

Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 strokes : 0.5

Check tolerance

cm3/1000s. 2.5

Shutoff solenoid

12 Volt

START TRANSITION

310 Rated speed rpm

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

10.0 cm3/1000 strokes

Shutoff solenoid

12 Volt

210 Rated speed rpm

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 strokes 20.0

Shutoff solenoid

Volt 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3

Tolerance mm : +-0,1 : 5,5 Dimension KF mm

: +-0,2 Tolerance mm

: 1,2 Dimension MS mm : +-0,2 Tolerance mm

**MICROSWITCH** 

SET

: ARF 12,0

End of test-specification sheet

L04

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 11.07.95 Edition : ISO 4113 Test oil

: 0 460 484 085 Part no. Pump designation : VE4/8F2300R459-2

Customer-spec. information Customer : RENAULT Motor : F8Q - 732 47.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C

Overflow

restriction mm 0.55

0.35 Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1250 Rated speed rpm :

Setting mm 4.3 : Tolerance mm 0.2 Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

1250 Rated speed rpm

Setting hPa Tolerance hPa 0.3 : Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 32.1

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm

Del. quantity cm3/1000 strokes : 3.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

FULL-LOAD SPEED REGULATION

2450 Rated speed rpm

Del. quantity cm3/1000 strokes : 28.5

Tolerance

cm3/1000 strokes : 3.0

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes : 15.0

Shutoff solenoid Volt	: 12	Rated speed rpm : 310	
		10	
		+ SV travel mm : 1.8 + Tolerance mm : 1.2	
LOAD-DEPENDENT ST	TART OF DELIVERY	+ Check	
SETTING		tolerance mm : 1.2	
		Shutoff solenoid	
DELIVERY DIFFEREN	<b>VCE</b>	† Volt : 12	
Dahad speed som	. 1250	+ VOD (AED 1/2)+ 12	
Rated speed rpm Del. quantity	: 1250		
cm3/1000 strokes	: -8.7	Rated speed rpm : 500	
Tolerance	•	+	
cm3/1000 strokes	: 1.0	+ SV travel mm : 3.1	
Shutoff solenoid	4.0	† Tolerance mm : 1.2	
Volt	: 12	+ Check	
PRESSURE DIFFEREN	ice	tolerance mm : 1.2 Shutoff solenoid	
I WESSONE DELLEVEN	10 L	Volt : 12	
Rated speed rpm	: 1250	+	
Del. quantity		+ KSB/AFB Volt : 12	
cm3/1000 strokes	: -0.2	†	
Tolerance cm3/1000 strokes	: 0.1	SUPPLY PUMP PRESSURE CHARACTERIS	110
Shutoff solenoid	. 0.1	Rated speed rpm : 2000	
Volt	: 12	+ Supply pomp	
		pressure bar : 6.8	
TIMING-DEVICE TRA	VEL DIFFERENCE	Tolerance hPa : 0.3	
Date of any and area	4050	+ Shutoff solenoid	
Rated speed rpm Del. quantity	: 1250	† Volt : 12	
cm3/1000 strokes	: -0.4	Rated speed rpm : 750	
Tolerance	•	+ Supply pomp	
cm3/1000 strokes	: 0.1	pressure bar : 3.4	
Shutoff solenoid	40	† Tolerance hPa : 0.3	
Volt	: 12	+ Shutoff solenoid + Volt : 12	
		$ \frac{1}{1}$	
INJECTION-PUMP TE	ST SPECIFICATIONS	OVERFLOW QUANTITY	
		+	
TIMING DEVICE CHA	RACTERISTIC	+ Rated speed rpm : 2250	
Dated aroad nam	: 2000	+ Overflow quantity + ccm/10s : 97.2	
Rated speed rpm	: 2000	Tolerance . 97.2	
SV travel mm	: 8.0	+ ccm/10s : 41.6	
Tolerance mm	: 0.4	+	
Check		+ Check tolerance	
tolerance mm	: 0.7	+ ccm/10s : 41.6 + Shutoff solenoid	
Shutoff solenoid Volt	: 12	Volt : 12	
VOCC	. , , ,	1	
Rated speed rpm	: 750	Rated speed rpm : 750	
		+ Overflow quantity	
SV travel mm	: 2.1	+ ccm/10s : 63.8	
Tolerance mm Check	: 0.4	+ Tolerance + ccm/10s : 22.2	
tolerance mm	: 0.7		
Shutoff solenoid		Check tolerance	
Volt	: 12	+ ccm/10s : 22.2	

Shutoff solenoid Volt	: 12	Shutoff solenoid Volt : 12
DELIVERY AND BREAK	KAWAY CHARACTERISTIC	Rated speed rpm : 750  Del. quantity
Rated speed rpm Del. quantity	: 2450	cm3/1000 strokes : 31.7 Tolerance
cm3/1000 strokes Tolerance	: 28.5	cm3/1000 strokes : 1.5 Check tolerance
cm3/1000 strokes Check tolerance	: 3.0	cm3/1000s. : 2.3 Shutoff solenoid
cm3/1000s. Shutoff solenoid	: 4.0	+ Volt : 12
Volt	: 12	+ Rated speed rpm : 1250 + Del. quantity
Rated speed rpm Del. quantity		+ cm3/1000 strokes : 32.1 + Tolerance
cm3/1000 strokes Check tolerance	: 14.5	+ cm3/1000 strokes : 0.5 + Check tolerance + cm3/1000s. : 2.3
cm3/1000S. Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm		
Del. quantity cm3/1000 strokes		ELECTR. SHUTOFF
Tolerance cm3/1000 strokes	: 2.5	CONTROL LEVER, IDLE STOP
Check tolerance cm3/1000s.	: 2.5	Rated speed rpm : 410  Del. quantity
Shutoff solenoid Volt	: 12	+ cm3/1000 strokes : 1.5 + Tolerance + cm3/1000 strokes : 1.5
Rated speed rpm Del. quantity	: 2250	Check tolerance cm3/1000s. : 1.5
cm3/1000 strokes Tolerance	: 34.0	Spread : 5.0
cm3/1000 strokes Check tolerance		+ FULL-LOAD STOP CONTROL LEVER
cm3/1000S. Shutoff solenaid	: 2.3	+ Rated speed rpm : 410
Volt	: 12	Del. quantity cm3/1000 strokes : 1.5
Rated speed rpm Del. quantity cm3/1000 strokes	: 1625 : 31.6	Tolerance - cm3/1000 strokes : 1.5 - Spread
Tolerance cm3/1000 strokes	: 1.5	cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s.	: 2.3	- cm3/1000s. : 1.5 - Spread
Shutoff solenoid Volt	: 12	cm3/1000 strokes : 5.0
Rated speed rpm	: 2000	‡
	: 33.5	<u> </u>
Tolerance cm3/1000 strokes Check tolerance	: 1.0	CHECKING LOAD-DEPENDENT START OF DELIVERY
cm3/1000s.	: 2.3	+

### DELIVERY DIFFERENCE

Rated speed rpm 1250

Del. quantity cm3/1000 strokes :

-11.0

Tolerance

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s.

2.0

Shutoff solenoid

Volt 12

### TIMING-DEVICE TRAVEL DIFFERENCE

1250 Rated speed rpm

Del. quantity

cm3/1000 strokes : -0.4

Tolerance

cm3/1000 strokes : 0.1

Check tolerance

cm3/1000s.0.1

Shutoff solenoid

Volt 12

### DELIVERY DIFFERENCE

1250 Rated speed rpm

Del. quantity

cm3/1000 strokes : 5.0

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.3.0

Shutoff solenoid

Volt 12

### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm 1250 0.2 Tolerance mm

Check

0.3 tolerance mm

Shutoff solenoid

12 Volt

### START TRANSITION

310 Rated speed rpm

Del. quantity cm3/1000 strokes : 30.0

Tolerance

cm3/1000 strokes 15.0

Shutoff solenoid

12 Volt

210 Rated speed rpm

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes 15.0

Shutoff solenoid

Volt 12

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 : +-1 Tolerance man Dimension KF mm : 5,4 : +-0,2 Tolerance mm

: 1,3 Dimension MS mm

: +-0,2 Tolerance mm

**MICROSWITCH** 

SET

: 0,8..3,0 mm

: 9,8..10,6

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.11.95 Test oil : ISO 4113

Part no. : 0 460 484 095 Pump designation : VE4/8F2300R463-1

Customer-spec. information
Customer : FIAT-AUTO
Motor : M708SA17/L014
Power KW : 42.0

### TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

### **REMARKS**

INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 5.3
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Setting hPa : 5.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

. 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 29.3
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

### IDLE SETTING

Rated speed rpm 450 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 2.5 Check tolerance 3.0 cm3/1000s.

### FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 20.0
Tolerance
cm3/1000 strokes : 3.0

Shutoff solenoid Volt : 12

### STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 50.0

Tolerance cm3/1000 strokes		13.0	Rated speed rpm	:	2000	
Shutoff solenoid Volt		12	t cy though an		7.6	
VOLL	•	12	+ SV travel mm + Tolerance mm	•	0.4	
			Shutoff solenoid		0.4	
			+ Volt	•	12	
LOAD-DEPENDENT ST	TADT	OF DELTHERY	I	•	12	
SETTING	IAIVI	OF DELIVERY	SUPPLY PUMP PRES	SURE	CHARACTERI	STIC
			+			
DELIVERY DIFFEREN	VCE		+ Rated speed rpm + Supply pomp	:	2300	
Rated speed rpm	:	1500	+ pressure bar	:	7.7	
Del. quantity			+ Tolerance hPa	:	0.3	
cm3/1000 strokes	:	-8.0	+ Shutoff solenoid	j		
Tolerance			→ Volt	:	12	
cm3/1000 strokes	:	1.0	+			
Shutoff solenoid			+ Rated speed rpm	:	600	
Volt	:	12	+ Supply pomp			
			+ pressure bar	:	3.4	
PRESSURE DIFFEREN	VCE		+ Tolerance hPa	:	0.3	
			+ Shutoff solenoid	ł		
Rated speed rpm	:	1500	+ Volt	•	12	
Del. quantity	•	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	•		
cm3/1000 strokes	:	-0.2	OVERFLOW QUANTIT	Y		
Tolerance	•	5.2	1	•		
cm3/1000 strokes		0.1	+ Rated speed rpm		2300	
Shutoff solenoid	•	0.1	+ Overflow quantit		2300	
Volt		12	+ ccm/10s	•	97.2	
VOCC	•	12	Tolerance	•	71.6	
TIMING-DEVICE TRA	VEL	DIFFERENCE	+ ccm/10s	:	41.6	
			+	-		
Rated speed rpm	:	150 <b>0</b>	+ Check tolerance			
Del. quantity			+ ccm/10s	:	41.6	
cm3/1000 strokes	:	-0.8	+ Shutoff solenoid			
Tolerance	-		+ Volt	:	12	
cm3/1000 strokes	:	0.1	+		_	
Shutoff solenoid	-		+ Rated speed rpm	:	600	
Volt	:	12	+ Overflow quantit			
	•		+ ccm/10s	<b>'</b> :	63.8	
	_		+ Tolerance			
INJECTION-PUMP TE	ST S	SPECIFICATION:	+ ccm/10s	:	22.2	
INJECTION-PUMP TE	ST S	SPECIFICATION	+ ccm/10s	:	22.2	
INJECTION-PUMP TE			ccm/10s Check tolerance	:	22.2	
			+	:	22.2	
TIMING DEVICE CHA			Check tolerance	:		
TIMING DEVICE CHA		TERISTIC 2300	Check tolerance ccm/10s Shutoff solenoid	:		
TIMING DEVICE CHA Rated speed rpm Tolerance mm	RACT	TERISTIC	Check tolerance ccm/10s	:	22.2	
TIMING DEVICE CHA Rated speed rpm Tolerance mm Check	RACT	TERISTIC 2300 0.4	Check tolerance ccm/10s Shutoff solenoid Volt	:	22.2 12	RISTIC
TIMING DEVICE CHA Rated speed rpm Tolerance mm Check tolerance mm	RACT	TERISTIC 2300	Check tolerance ccm/10s Shutoff solenoid	:	22.2 12	RISTIC
TIMING DEVICE CHARACTER Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid	RACT	2300 0.4 0.7	Check tolerance ccm/10s Shutoff solenoid Volt DELIVERY AND BRE	: : AKAWA	22.2 12 AY CHARACTE	RISTIC
TIMING DEVICE CHA Rated speed rpm Tolerance mm Check tolerance mm	RACT	TERISTIC 2300 0.4	Check tolerance ccm/10s Shutoff solenoid Volt DELIVERY AND BRE	:	22.2 12	RISTIC
TIMING DEVICE CHAR Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt	RACT	2300 0.4 0.7 12	Check tolerance ccm/10s Shutoff solenoid Volt  DELIVERY AND BRE  Rated speed rpm Del. quantity	: : AKAWA :	22.2 12 AY CHARACTE 2500	RISTIC
TIMING DEVICE CHARACTER Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid	RACT	2300 0.4 0.7	Check tolerance ccm/10s Shutoff solenoid Volt  DELIVERY AND BRE  Rated speed rpm Del. quantity cm3/1000 strokes	: : AKAWA :	22.2 12 AY CHARACTE	RISTIC
TIMING DEVICE CHARACTER Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm	RACT	2300 0.4 0.7 12 800	Check tolerance ccm/10s Shutoff solenoid Volt  DELIVERY AND BRE  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : AKAW <i>A</i> :	22.2 12 AY CHARACTE 2500 20.0	RISTIC
TIMING DEVICE CHARACTER Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm	RACT	2300 0.4 0.7 12 800 2.0	Check tolerance ccm/10s Shutoff solenoid Volt  DELIVERY AND BRE  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : AKAW <i>A</i> :	22.2 12 AY CHARACTE 2500	RISTIC
TIMING DEVICE CHARACTER Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm	RACT	2300 0.4 0.7 12 800	Check tolerance ccm/10s Shutoff solenoid Volt  DELIVERY AND BRE  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : AKAW <i>A</i> :	22.2 12 AY CHARACTE 2500 20.0 3.0	RISTIC
TIMING DEVICE CHARACTER Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check	RACT	2300 0.4 0.7 12 800 2.0 0.4	Check tolerance ccm/10s Shutoff solenoid Volt  DELIVERY AND BRE  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : AKAWA : :	22.2 12 AY CHARACTE 2500 20.0	RISTIC
TIMING DEVICE CHARACTER Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	RACT	2300 0.4 0.7 12 800 2.0	Check tolerance ccm/10s Shutoff solenoid Volt  DELIVERY AND BRE  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: : AKAWA : :	22.2 12 AY CHARACTE 2500 20.0 3.0 5.0	RISTIC
TIMING DEVICE CHARACTER Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check	RACT	2300 0.4 0.7 12 800 2.0 0.4	Check tolerance ccm/10s Shutoff solenoid Volt  DELIVERY AND BRE  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : AKAWA : :	22.2 12 AY CHARACTE 2500 20.0 3.0	RISTIC

Rated speed rpm	:	2700	+			
Del. quantity cm3/1000 strokes	:	5.0	‡	ELECTR. SHUTOFF		
Check tolerance cm3/1000s.	:	5.0	‡	CONTROL LEVER, ID	LE ST	OP
Shutoff solenoid Volt		12	1	Rated speed rpm Del. quantity	:	450
Rated speed rpm	:	2900	1	cm3/1000 strokes Tolerance	:	1.5
Del. quantity		0.8	Ŧ	cm3/1000 strokes	:	1.5
cm3/1000 strokes Tolerance			Ŧ	Check tolerance cm3/1000s.	:	1.5
cm3/1000 strokes Check tolerance	:	0.8	‡	Spread cm3/1000 strokes	:	5.0
cm3/1000s. Shutoff solenoid	:	0.8	‡	FULL-LOAD STOP CO	NTROL	LEVER
Volt	:	12	‡	Rated speed rpm	:	450
Rated speed rpm Del. quantity	:	2300	‡	Del. quantity cm3/1000 strokes	:	1.5
cm3/1000 strokes Tolerance	:	31.1	‡	Tolerance cm3/1000 strokes	:	1.5
cm3/1000 strokes Check tolerance	:	1.2	1	Spread cm3/1000 strokes		5.0
cm3/1000s. Shutoff solenoid	:	2.5	<u>†</u>	Check tolerance cm3/1000s.		1.5
Volt	:	12	<u> </u>	Spread cm3/1000 strokes	•	5.0
Rated speed rpm Del. quantity	:	1000	1	IDLE DELIVERY	•	J.0
cm3/1000 strokes	:	30.0	Ŧ			450
Tolerance cm3/1000 strokes	:	1.2	Ŧ	Rated speed rpm Del. quantity		650
Check tolerance cm3/1000s.	:	2.3	‡	cm3/1000 strokes Tolerance		2.5
Shutoff solenoid Volt	:	12	‡	cm3/1000 strokes Check tolerance	:	2.5
Rated speed rpm	:	600	+	cm3/1000S. Shutoff solenoid	:	2.5
Del. quantity cm3/1000 strokes	:	30.0	‡	Volt	:	12
Tolerance cm3/1000 strokes	:	1.5	‡	Rated speed rpm Del. quantity		550
Check tolerance cm3/1000s.	:	3.5	‡	cm3/1000 strokes Tolerance	:	5.0
Shutoff solenoid Volt	:	12	‡	cm3/1000 strokes Check tolerance	:	3.0
Rated speed rpm	:	1500	‡	cm3/1000S. Shutoff solenoid	:	5.5
Del. quantity cm3/1000 strokes		29.3	Ţ.	Volt	:	12
Tolerance cm3/1000 strokes		0.5	1			
Check tolerance cm3/1000s.	•	2.3	1			· · · · · · · · · · · · · · · · · · ·
Shutoff solenoid Volt	•	12		CHECKING LOAD-DEPE START OF DELIVERY	ENDEN	τ
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•	1 (_	+	DELIVERY DIFFEREN	°F	
			I	ATTACK! NTI LEVELA		

Rated speed rpm	: 1500
Del. quantity cm3/1000 strokes	: -10.0
Tolerance cm3/1000 strokes	: 3.0
Check tolerance cm3/1000s.	: 4.0
Shutoff solenoid Volt	: 12
TIMING-DEVICE TRA	· ·
Rated speed rpm Del. quantity	: 1500
cm3/1000 strokes Tolerance	: -0.8
cm3/1000 strokes Check tolerance	: 0.1
cm3/1000s.	: 0.1
Shutoff solenoid Volt	: 12
START TRANSITION	
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 30.0
cm3/1000 strokes	: 5.0
Shutoff solenoid Volt	: 12
Rated speed rpm Del. quantity	: 350
cm3/1000 strokes Tolerance	: 50.0
cm3/1000 strokes	: 8.0
Shutoff solenoid Volt	: 12
	STMENT DIMENSIONS
Dimension K mm To:lerance mm	: 3,3 : +-0,1
Dimension KF mm	: 5,5
	: +-0,2
Tolerance mm Dimension MS mm	: 1,8

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.02.96 : ISO 4113 Test oil

: 0 460 494 356 Part no. Pump designation : VE4/9F2100R471-1

Customer-spec. information

: VW Customer

: 1,9 L UD f. T4 Motor

50.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

147 Tolerance bar

: 1 680 750 073 Test lines

Outside diameter : 6.00

2.00 x inside diameter : 450 x length mm

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,9 Tolerance mm : +-0,02

Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

3.9 Setting mm Tolerance mm 0.2 Shutoff solenoid 12

Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Setting hPa 5.6 Tolerance hPa 0.3

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

40.0

1250 Rated speed rpm :

Del. quantity cm3/1000 strokes:

Tolerance 0.5

cm3/1000 strokes : Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

12 Volt

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

550 Rated speed rpm Del. quantity

cm3/1000 strokes : 5.5

Tolerance

cm3/1000 strokes 0.5

Shutoff solenoid

12 Volt

FULL-LOAD SPEED REGULATION

Rated speed rpm 2400

Del. quantity cm3/1000 strokes :

15.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY	+ Tolerance mm : 0.4 + Check
Rated speed rpm : 100 Del. quantity	tolerance mm : 0.8  Shutoff solenoid
cm3/1000 strokes : 65.0 Tolerance	Volt : 12
cm3/1000 strokes : 25.0 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12	Rated speed rpm : 1700 Supply pomp
	pressure bar : 6.9
	+ Tolerance hPa : 0.3
LAAN_NEDENINGNIT START OF NELTUCRY	Shutoff solenoid
LOAD-DEPENDENT START OF DELIVERY	
SETTING	† Volt : 12
	+
DELIVERY DIFFERENCE	+ Rated speed rpm : 750
	+ Supply pomp
Rated speed rpm : 1250	+ pressure bar : 4.1
Del. quantity	+ Tolerance hPa : 0.3
cm3/1000 strokes : -7.0	+ Shutoff solenoid
Tolerance	† Volt : 12
cm3/1000 strokes : 1.0	†
Shutoff solenoid	+ OVERFLOW QUANTITY
Volt : 12	+
	+ Rated speed rpm : 1850
PRESSURE DIFFERENCE	+ Overflow quantity
	+ ccm/10s : 97.2
Rated speed rpm : 1250	Tolerance
Del. quantity	+ ccm/10s : 41.6
	T CCIII/ 105 . 41.0
	†
Tolerance	+ Check tolerance
cm3/1000 strokes : 0.1	+ ccm/10s : 55.5
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
	+
TIMING-DEVICE TRAVEL DIFFERENCE	+ Rated speed rpm : 750
	+ Overflow quantity
Rated speed rpm : 1250	+ ccm/10s : 63.8
Del. quantity	+ Tolerance
cm3/1000 strokes : -1.0	+ ccm/10s : 22.2
Tolerance	1
cm3/1000 strokes : 0.1	Check tolerance
Shutoff solenoid	+ ccm/10s : 34.7
	+ Shutoff solenoid
Volt : 12	
	+ Volt : 12
	THE THEORY AND DESIGNATION OF THE TOTAL OF T
INJECTION-PUMP TEST SPECIFICATIONS	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
	†
TIMING DEVICE CHARACTERISTIC	+ Rated speed rpm : 2400
	† Del. quantity
Rated speed rpm : 1700	+ cm3/1000 strokes : 15.0
Tolerance mm : 0.4	† Tolerance
Check	+ cm3/1000 strokes : 2.0
tolerance mm : 0.8	- Check tolerance
Shutoff solenoid	- cm3/1000s. : 4.0
Volt : 12	Shutoff solenoid
, IL	+ Volt : 12
Dated aread are a 750	7 1000
Rated speed rpm : 750	T Dated annual annual 2000
	+ Rated speed rpm : 2250
SV travel mm : 1.5	+

Del. quantity			†
cm3/1000 strokes Tolerance	:	29.0	+ ELECTR. SHUTOFF
cm3/1000 strokes	:	5.0	CONTROL LEVER, IDLE STOP
Check tolerance cm3/1000s.	:	6.0	Rated speed rpm : 425
Shutoff solenoid Valt	:	12	+ Del. quantity + cm3/1000 strokes : 1.5
Rated speed rpm	:	2650	Tolerance cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes		1.5	Check tolerance
Tolerance			Spread
cm3/1000 strokes Check tolerance	:	1.5	cm3/1000 strokes : 5.0
cm3/1000s. Shutoff solenoid	:	1.5	FULL-LOAD STOP CONTROL LEVER
Volt	:	12	Rated speed rpm : 425 Del. quantity
Rated speed rpm	:	1850	+ cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes	:	41.0	+ Tolerance + cm3/1000 strokes : 1.5
Tolerance cm3/1000 strokes		1.0	+ Spread + cm3/1000 strokes : 5.0
Check tolerance	•		+ Check tolerance
cm3/1000s. Shutoff solenoid	:	2.2	+ cm3/1000s. : 1.5 + Spread
Volt	:	12	cm3/1000 strokes : 5.0
Rated speed rpm Del. quantity	:	450	<u>†</u>
cm3/1000 strokes	:	39.0	
Tolerance cm3/1000 strokes	:	3.0	+ RESIDUAL QUANTITY +
Check tolerance cm3/1000s.	:	5.5	+ Rated speed rpm : 515 + Del. quantity
Shutoff solenoid			+ cm3/1000 strokes : 6.5
Volt	:	12	Tolerance cm3/1000 strokes : 1.0
Rated speed rpm Del. quantity	:	750	+ Check tolerance + cm3/1000s. : 2.5
cm3/1000 strokes	:	38.5	Shutoff solenoid Volt : 12
Tolerance			7 1000
cm3/1000 strokes	:	1.5	+
cm3/1000 strokes Check tolerance cm3/1000s.	:	1.5 3.0	<del></del>
cm3/1000 strokes Check tolerance	:		CHECKING LOAD-DEPENDENT START OF DELIVERY
cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt	•	3.0	•
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes		3.0 12	START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes		3.0 12 1250	START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -10.0
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		3.0 12 1250 40.0	START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -10.0  Tolerance  cm3/1000 strokes : 3.0
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance		3.0 12 1250 40.0 0.5	START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -10.0  Tolerance

TIMING-DEVICE TRA	۸\/E۱	NIEEEDENICE
ITHING PEATOR IN	1466	DITTEREST
Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes Tolerance	:	-1.0
cm3/1000 strokes	:	0.1
Check tolerance cm3/1000s. Shutoff solenoid	:	0.1
Volt	:	12
DELIVERY DIFFEREN	NCE	
Rated speed rom	•	1250

Mateu speed i pili	•	1270
Del. quantity		
cm3/1000 strokes	:	5.0
Tolerance		
cm3/1000 strokes	:	3.0
Check tolerance		
cm3/1000s.	:	3.0
Shutoff solenoid		
Volt	:	12
• -		· —

# PRESSURE DIFFERENCE

Rated speed rpm Supply pomp	:	1250
pressure bar Tolerance hPa	:	-0.9 0.2
Shutoff solenoid Volt	:	12

#### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Tolerance mm	:	0.2
Check		_
tolerance mm	:	0.6
Shutoff solenoid		
Volt	:	12

# EXHAUST-GAS RECIRCULATION

Rated speed rpm	:	1000
Del. quantity cm3/1000 strokes	:	22.0
Tolerance cm3/1000 strokes	:	1.0
Check tolerance cm3/1000s.	:	3.0
Shutoff solenoid Volt	:	12

# START TRANSITION

Rated speed rpm : 380

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	:	35.0 10.0 12
Rated speed rpm	:	180
Del. quantity cm3/1000 strokes	:	65.0
Tolerance cm3/1000 strokes Shutoff solenoid	:	25.0
Volt	:	12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	K mm	: 3,3
Tolerance	mm	: +-0,1
Dimension	KF mm	: 5,3
Tolerance	mm	: +-0,2
Dimension	MS mm	: 1,3
Tolerance	mm	: +-0,2

# MICROSWITCH SET

	_	
mm	: 0	0,83,0
	: A	RF 12,0

# CONTROL LEVER POSITION SET

Control lever	
position YA mm	: 20,022,0

Control lever position YB mm : 61,5..72,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.03.96 Test oil : ISO 4113

Part no. : 0 460 494 391 Pump designation : VE4/9F2100R471-2

Customer—spec. information Customer : VW Motor : 1.9 LUD Power KW : 50.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 147 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

**REMARKS** 

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.9
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.6 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 40.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550

Del. quantity
cm3/1000 strokes : 5.5

Tolerance
cm3/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

# FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid Volt	•	12	İ	Rated speed rpm	:	1700
40(1	•	,,,	+	Supply pomp	•	
			‡	pressure bar Tolerance hPa	:	6.9 0.3
LOAD-DEPENDENT ST SETTING	ART	OF DELIVERY	‡	Shutoff solenoid Volt	:	12
DELIVERY DIFFEREN	ICE		Ī	Rated speed rpm Supply pomp	:	750
Rated speed rpm Del. quantity	:	1250	1	pressure bar Tolerance hPa	:	4.1 0.3
cm3/1000 strokes Tolerance	:	-7.0	+	Shutoff solenoid Volt	•	12
cm3/1000 strokes	:	1.0	Ŧ		•	12
Shutoff solenoid Volt	:	12	‡	OVERFLOW QUANTITY		
PRESSURE DIFFEREN	CE		‡	Rated speed rpm Overflow quantity		1850
Rated speed rpm	:	1250	‡	ccm/10s Tolerance	:	97.2
Del. quantity cm3/1000 strokes			<u> </u>	ccm/10s	:	41.6
Tolerance cm3/1000 strokes			1	Check tolerance ccm/10s		55.5
Shutoff solenoid	•	12	Ŧ	Shutoff solenoid	•	
Volt	•		‡	Volt	•	12
TIMING-DEVICE TRA	VEL	DIFFERENCE	‡	Rated speed rpm Overflow quantity	:	750
Rated speed rpm Del. quantity	:	1250	‡	ccm/10s Tolerance	:	63.8
cm3/1000 strokes Tolerance	:	-1.0	Ì	ccm/10s	:	22.2
cm3/1000 strokes Shutoff solenoid	:	0.1	+	Check tolerance ccm/10s		34.7
Volt	:	12	7	Shutoff solenoid	•	
			‡	Volt	:	12
INJECTION-PUMP TE	ST	SPECIFICATIONS	+	DELIVERY AND BREAK	KAWA	AY CHARACTERISTIC
TIMING DEVICE CHA	RAC	TERISTIC	+	Rated speed rpm Del. quantity	:	2400
Rated speed rpm Tolerance mm	:	1700 0.4	1	cm3/1000 strokes Tolerance	:	15.0
Check tolerance mm	•	0.8	+	cm3/1000 strokes Check tolerance	:	2.0
Shutoff solenoid	•	12	Ŧ	cm3/1000s.	:	4.0
Volt	•		Ŧ	Shutoff solenoid Volt	:	12
Rated speed rpm	:	750	‡	Rated speed rpm	:	2250
SV travel mm Tolerance mm	:	1.5 0.4	‡	Del. quantity cm3/1000 strokes	:	29.0
Check tolerance mm	:	0.8	‡	Tolerance cm3/1000 strokes	:	5.0
Shutoff solenoid Volt	:	12	‡	Check tolerance cm3/1000s.	:	6.0
SUPPLY PUMP PRESSE	JRE	CHARACTERISTIC	+	Shutoff solenoid Volt	:	12

			+ Tolerance
Rated speed rpm	:	2650	→ cm3/1000 strokes : 1.5
Del. quantity			+ Check tolerance
cm3/1000 strokes	:	1.5	+ cm3/1000s. : 1.5
Tolerance			+ Spread
cm3/1000 strokes	:	1.5	+ cm3/1000 strokes : 5.0
Check tolerance			+
cm3/1000\$.	:	1.5	+ FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid			+
Volt	:	12	+ Rated speed rpm : 425
			+ Del. quantity
Rated speed rpm	:	1850	+ cm3/1000 strokes : 1.5
Del. quantity			+ Tolerance
cm3/1000 strokes	:	41.0	+ cm3/1000 strokes : 1.5
Tolerance			+ Spread
cm3/1000 strokes	:	1.0	+ cm3/1000 strokes : 5.0
Check tolerance			+ Check tolerance
cm3/1000s.	:	2.2	+ cm3/1000s. : 1.5
Shutoff solenoid			Spread
Volt	:	12	+ cm3/1000 strokes : 5.0
			+
Rated speed rpm	:	450	+
Del. quantity			+
cm3/1000 strokes	:	39.0	
Tolerance			+ RESIDUAL QUANTITY
cm3/1000 strokes	:	3.0	+
Check tolerance			+ Rated speed rpm : 515
cm3/1000s.	:	5.5	+ Del. quantity
Shutoff solenoid			+ cm3/1000 strokes : 6.5
Volt	:	12	+ Tolerance
			+ cm3/1000 strokes : 1.0
Rated speed rpm	:	750	+ Check tolerance
Del. quantity		70 F	+ cm3/1000s. : 2.5
cm3/1000 strokes	:	38.5	+ Shutoff solenoid
Tolerance		4 -	+ Volt : 12
cm3/1000 strokes	:	1.5	†
Check tolerance		7.0	†
cm3/1000s.	:	3.0	ALIENIATIO LAAN NEDEUNGUT
Shutoff solenoid		40	+ CHECKING LOAD-DEPENDENT
Volt	:	12	+ START OF DELIVERY
Datad spand see		1250	T NEI TUEDY NIEEEDENCE
Rated speed rpm	:	1630	+ DELIVERY DIFFERENCE
Del. quantity cm3/1000 strokes	•	40.0	Rated speed rpm : 1250
Tolerance	•	40.0	+ Del. quantity
cm3/1000 strokes		0.5	- cm3/1000 strokes : -10.0
Check tolerance	•	ر.ں	Tolerance
cm3/1000s.		2.2	+ cm3/1000 strokes : 3.0
Shutoff solenoid	•	C • C	Check tolerance
Volt		12	- check toterance - cm3/1000s. : 4.0
VOLL	•	16	Shutoff solenoid
	:		T 31141011 30(C1014
	:		12 Volt • 12
***	:		+ Volt : 12
ELECTR. SHUTOFF	:		+
ELECTR. SHUTOFF	: 	TOP	TIMING-DEVICE TRAVEL DIFFERENCE
ELECTR. SHUTOFF CONTROL LEVER, ID	: 	ТОР	TIMING-DEVICE TRAVEL DIFFERENCE
CONTROL LEVER, ID			TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250
CONTROL LEVER, ID Rated speed rpm	: LE S	TOP 425	TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity
CONTROL LEVER, ID Rated speed rpm Del. quantity	:		TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity
CONTROL LEVER, ID Rated speed rpm	:	425	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : -1.0

Check tolerance 0.1 cm3/1000S.Shutoff solenoid 12 Volt DELIVERY DIFFERENCE 1250 Rated speed rpm Del. quantity 5.0 cm3/1000 strokes : Tolerance 3.0 cm3/1000 strokes : Check tolerance cm3/1000s. 3.0 Shutoff solenoid 12 Volt PRESSURE DIFFERENCE 1250 Rated speed rpm : Supply pomp -0.9pressure bar 0.2 Tolerance hPa Shutoff solenoid 12 Volt TIMING-DEVICE TRAVEL DIFFERENCE 1250 Rated speed rpm Tolerance mm 0.2 Check tolerance mm 0.6 Shutoff solenoid Volt 12 EXHAUST-GAS RECIRCULATION 1000 Rated speed rpm Del. quantity cm3/1000 strokes : 22.0 Tolerance 1.0 cm3/1000 strokes : Check tolerance 3.0 cm3/1000s. Shutoff solenoid 12 Volt START TRANSITION 380 Rated speed rpm Del. quantity 35.0 cm3/1000 strokes : Tolerance cm3/1000 strokes 10.0 Shutoff solenoid 12 Volt 180 Rated speed rpm

Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,3
Tolerance mm : +-0,2
Dimension MS mm : 1,3
Tolerance mm : +-0,2

MICROSWITCH SET

: ARF 12,0

CONTROL LEVER POSITION

Control lever

position YA mm : 20,0..22,0

Control lever

position YB mm : 61,5..72,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12,03.96 Test oil : ISO 4113

Part no. : 0 460 494 417 Pump designation : VE4/9F2100R471-3

Customer-spec. information Customer : VW

Motor : 1.9L UD Power KW : 50.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 147 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.9 Tolerance mm : 0.2

Shutoff solenoid

Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.6 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550 Del. quantity

cm3/1000 strokes : 5.5

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt : 12

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

65.0

cm3/1000 strokes : Tolerance

cm3/1000 strokes : 25.0

Churaff actanoid			ı				
Shutoff solenoid Volt	:	12	‡	Rated speed rpm Supply pomp	:	1700	
			+	pressure bar	:	6.9	
			+	Tolerance hPa	:	0.3	
LOAD-DEPENDENT ST	<b>FART</b>	OF DELIVERY	+	Shutoff solenoid			
SETTING			+	Volt	:	12	
			+				
DELIVERY DIFFEREN	<b>VCE</b>		†	Rated speed rpm	:	750	
		4050	†	Supply pomp		, ,	
Rated speed rpm	:	1250	†	pressure bar	:	4.1	
Del. quantity cm3/1000 strokes		-7.0	†	Tolerance hPa Shutoff solenoid	:	0.3	
Tolerance	:	-7.0	Ť	Volt		12	
cm3/1000 strokes		1.0	I	VOCC	•	12	
Shutoff solenoid	•	1.0	I	OVERFLOW QUANTITY			
Volt		12	I	OVERTEON GONIALITY			
VOCE	•	12	I	Rated speed rpm	:	1850	
PRESSURE DIFFEREN	ICE		1	Overflow quantity		.050	
THEODORE DEFICE			1	ccm/10s	:	97.2	
Rated speed rpm	:	1250	1	Tolerance			
Del. quantity			1	ccm/10s	:	41.6	
cm3/1000 strokes	:	-0.2	+				
Tolerance			+	Check tolerance			
cm3/1000 strokes	:	0.1	+	ccm/10s	:	55.5	
Shutoff solenoid			+	Shutoff solenoid			
Volt	:	12	+	Volt	:	12	
			†	~		750	
TIMING-DEVICE TRA	IVEL	DIFFERENCE	†	Rated speed rpm	:	750	
Doday I amount ass	_	1050	†	Overflow quantity	_	<i>(</i> 7 0	
Rated speed rpm	:	1250	Ť	ccm/10s Tolerance	:	63.8	
Del. quantity cm3/1000 strokes		-1.0	Ī	ccm/10s	:	22.2	
Tolerance	•	-1.0	I	CCIII/ TOS	•	£	
cm3/1000 strokes	•	0.1	1	Check tolerance			
Shutoff solenoid	•	<b>3.</b> (	1	ccm/10s	:	34.7	
Volt	:	12	<u> </u>	Shutoff solenoid	•		
			+	Volt	:	12	
			<del></del>				
INJECTION-PUMP TE	ST	SPECIFICATIONS	†	DELIVERY AND BREAK	KAWA	Y CHARACTER	ISTIC
TIMING DEVICE CHA	DAC	TEDICTIC	†	Rated speed rpm	:	2400	
ITHING DEATCE CHY	KAL	IEKISIIC	I	Del. quantity	•	2400	
Rated speed rpm		1700	I	cm3/1000 strokes	•	15.0	
Tolerance mm	•	0.4	1	Tolerance	•	73.0	
Check	•	0.4	1	cm3/1000 strokes	:	2.0	
tolerance mm	•	0.8	1	Check tolerance	•	2.0	
Shutoff solenoid	•	0.0	1	cm3/1000s.	:	4.0	
Volt	:	12	1	Shutoff solenoid			
			+	Volt	:	12	
Rated speed rpm	:	750	+				
			+	Rated speed rpm	:	2250	
SV travel mm	:	1.5	+	Del. quantity			
Tolerance mm	:	0.4	†	cm3/1000 strokes	:	29.0	
Check		0.0	†	Tolerance		r 0	
tolerance mm	:	0.8	†	cm3/1000 strokes	:	5.0	
Shutoff solenoid		12	†	Check tolerance		4.0	
Volt	:	12	†	cm3/1000S. Shutoff solenoid	•	6.0	
SUPPLY PUMP PRESS	IIP=	CHADACTEDISTIC	I	Volt		12	
SOLIEL FORE EKESS	UNE	CHARACTERIOTIC	T	+U(t	•	1 6	

			† Tolerance
Rated speed rpm	:	2650	+ cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes	•	1.5	+ Check tolerance + cm3/1000s. : 1.5
Tolerance	•		Spread
cm3/1000 strokes	:	1.5	cm3/1000 strokes : 5.0
Check tolerance		1 5	FULL LOAD STOP CONTROL LEVED
cm3/1000S. Shutoff solenoid	:	1.5	+ FULL-LOAD STOP CONTROL LEVER
Volt	:	12	Rated speed rpm : 425
			+ Del. quantity
Rated speed rpm	:	1850	+ cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes	•	41.0	+ Tolerance + cm3/1000 strokes : 1.5
Tolerance	•	41.0	Spread
cm3/1000 strokes	:	1.0	+ cm3/1000 strokes : 5.0
Check tolerance		• •	+ Check tolerance
cm3/1000s. Shutoff solenoid	:	2.2	+ cm3/1000s. : 1.5
Volt	:	12	+ Spread + cm3/1000 strokes : 5.0
,,,,,	•		+
Rated speed rpm	:	450	+
Del. quantity cm3/1000 strokes		39.0	†
Tolerance	•	39.0	T RESIDUAL QUANTITY
cm3/1000 strokes	:	3.0	+
Check tolerance			Rated speed rpm : 515
cm3/1000s.	:	5.5	+ Del. quantity
Shutoff solencid Volt		12	+ cm3/1000 strokes : 6.5 + Tolerance
VOCC	•	12	cm3/1000 strokes : 1.0
Rated speed rpm	:	750	+ Check tolerance
Del. quantity			+ cm3/1000s. : 2.5
cm3/1000 strokes	:	38.5	+ Shutoff solenoid + Volt : 12
Tolerance cm3/1000 strokes	•	1.5	† Volt : 12
Check tolerance	•	1.5	<del> </del>
cm3/1000S.	:	3.0	<del></del>
Shutoff solenoid		42	+ CHECKING LOAD-DEPENDENT
Volt	:	12	START OF DELIVERY
Rated speed rpm	:	1250	DELIVERY DIFFERENCE
Del. quantity			+
cm3/1000 strokes	:	40.0	+ Rated speed rpm : 1250
Tolerance cm3/1000 strokes		0.5	+ Del. quantity + cm3/1000 strokes : −10.0
Check tolerance	•	0.5	+ Tolerance
cm3/1000s.	:	2.2	+ cm3/1000 strokes : 3.0
Shutoff solenoid		40	+ Check tolerance
Volt	:	12	+ cm3/1000S. : 4.0 + Shutoff solenoid
			+ Volt : 12
		····································	
ELECTR. SHUTOFF		TOD	TIMING-DEVICE TRAVEL DIFFERENCE
CONTROL LEVER, ID	LE S	100	Rated speed rpm : 1250
Rated speed rpm	:	425	Del. quantity
Del. quantity			+ cm3/1000 strokes : −1.0
cm3/1000 strokes	:	1.5	Tolerance
			+ cm3/1000 strokes : 0.1

Check tolerance cm3/1000s. 0.1 Shutoff solenoid Volt 12 DELIVERY DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid 12 Volt PRESSURE DIFFERENCE 1250 Rated speed rpm : Supply pomp -0.9pressure bar Tolerance hPa 0.2 Shutoff solenoid 12 Volt TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 0.2 Tolerance mm Check tolerance mm 0.6 Shutoff solenoid Volt 12 EXHAUST-GAS RECIRCULATION 1000 Rated speed rpm Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 strokes : 1.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid 12 Volt START TRANSITION Rated speed rpm 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 strokes : 10.0 Shutoff solenoid Volt 12

Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,3
Tolerance mm : +-0,2
Dimension MS mm : 1,3
Tolerance mm : +-0,2

MICROSWITCH SET

mm : 0,8...3,0 : ARF 12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 20,0..22,0

Control lever

position YB mm : 61,5..72,5

End of test-specification sheet

Rated speed rpm :

180

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.03.94 Test oil : ISO 4113

Part no. : 0 460 494 309 Pump designation : VE4/9F2250R472

Customer-spec. information

Customer : PSA

Motor : XUD 9 TE-Y CATA

#### TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### **REMARKS**

### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3 Tolerance mm : +-0,2 Outlet : A

#### INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 4.1

Tolerance mm : 4.1
Shutoff solenoid

Volt : 12

#### SUPPLY PUMP PRESSURE

Volt

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

1250 Rated speed rpm Aneroid pressure 1000 hPa Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Volt 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

3.0

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

cm3/1000s.

Rated speed rpm : 490

Del. quantity	+ Aneroid pressure
cm3/1000 strokes : 8.5	† hPa : 1000
Tolerance	1 1114 . 1000
cm3/1000 strokes : 0.5	SV travel mm : 6.5
Shutoff solenoid	+ Tolerance mm : 0.4
Volt : 12	Check
10(1)	tolerance mm : 0.7
FULL-LOAD SPEED REGULATION	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 2575	<del>}</del>
Pressure hPa : 1000	+ Rated speed rpm : 900
Del. quantity	+ Aneroid pressure
cm3/1000 strokes : 14.0	+ hPa : 1000
Tolerance	<del>†</del>
cm3/1000 strokes : 2.0	+ SV travel mm : 1.2
Shutoff solenoid	† Tolerance mm : 0.4
Volt : 12	+ Check
	tolerance mm : 0.7
STARTING FUEL DELIVERY	+ Shutoff solenoid
Dated aread arm 150	† Volt : 12
Rated speed rpm : 150	CUDDLY DUMD DDECCUDE CHADACTEDICTIC
Del. quantity cm3/1000 strokes : 52.0	SUPPLY PUMP PRESSURE CHARACTERISTIC
Tolerance	Rated speed rpm : 2000
cm3/1000 strokes : 15.0	Aneroid pressure
Shutoff solenoid	hPa : 1000
Volt : 12	+ Supply pomp
1011	pressure bar : 6.8
SET GRADUATED STARTING DELIVERY	+ Tolerance hPa : 0.3
CONTROL LEVER, IDLE STOP	+ Shutoff solenoid
,	+ Volt : 12
Rated speed rpm : 200	<del> </del>
Del. quantity	+ Rated speed rpm : 900
cm3/1000 strokes : 53.0	+ Aneroid pressure
Tolerance	† hPa : 1000
cm3/1000 strokes : 3.0	+ Supply pomp
Shutoff solenoid	+ pressure bar : 4.2
Volt : 12	+ Tolerance hPa : 0.3
	+ Shutoff solenoid + Volt : 12
LOAD-DEPENDENT START OF DELIVERY	+ Volt : 12
SETTING	T OVERFLOW QUANTITY
5C1114G	I OVERTEON GOANTITT
TIMING-DEVICE TRAVEL DIFFERENCE	Rated speed rpm : 2150
17117149 PEATOR TIMES PENTENDE	+ Aneroid pressure
Rated speed rpm : 1500	hPa : 1000
Del. quantity	Overflow quantity
cm3/1000 strokes : 2.6	+ ccm/10s : 97.2
Tolerance	+ Tolerance
cm3/1000 strokes : 0.1	+ ccm/10s : 41.6
Shutoff solenoid	†
Volt : 12	+ Check tolera
	+ ccm/10s : 41.6
THIRTION DIME TEST SECTEDATIONS	+ Shutoff solenoid + Volt : 12
INJECTION-PUMP TEST SPECIFICATIONS	† Volt : 12
TIMING DEVICE CHARACTERISTIC	Rated speed rpm : 500
ITHITING DEATHE CHWEWCIEKTSIIC	Aneroid pressure
Rated speed rpm : 2000	hPa : 1000
Tares speca (pill ) E000	1
	•

Overflow quantity ccm/10s	y : 63.8		Rated speed rpm Aneroid pressure	:	2150
Tolerance	: 22.2	+ +	nPa	:	1000
ccm/10s Check tolerance	: 22.2	+ 0	Del. quantity cm3/1000 strokes Folerance	:	50.1
ccm/10s Shutoff solenoid	: 22.2	+ 0	cm3/1000 strokes Check tolerance	:	1.0
Volt	: 12	+ 0	cm3/1000s. Shutoff solenoid	:	2.2
DELIVERY AND BREA	AKAWAY CHARACTERISTIC	•	olt	:	12
Rated speed rpm Aneroid pressure	: 2575		Rated speed rpm Aneroid pressure	:	2000
hPa Del. quantity	: 1000	+ r	nPa Del. quantity	:	1000
cm3/1000 strokes Tolerance	: 14.0	+ 0	cm3/1000 strokes Folerance	:	52.0
cm3/1000 strokes Check tolerance	: 2.0	+ 0	cm3/1000 strokes Check tolerance	:	1.0
cm3/1000s. Shutoff solenoid	: 4.0	+ 0	cm3/1000S. Shutoff solenoid	:	2.2
Volt	: 12		olt/	:	12
Rated speed rpm Aneroid pressure	: 2375		Rated speed rpm Aneroid pressure	:	500
hPa Del. quantity	: 1000	+ h	Pel. quantity	:	1000
cm3/1000 strokes Tolerance	: 39.0	+ 0	cm3/1000 strokes Tolerance	:	48.3
cm3/1000 strokes Check tolerance	: 5.0	+ c	:m3/1000 strokes :heck tolerance	:	1.5
cm3/1000s. Shutoff solenoid	: 6.0	+ c	m3/1000s.	:	3.0
Volt	: 12		olt	:	12
Rated speed rpm Aneroid pressure	: 2750		lated speed rpm	:	1250
hPa Del. quantity	: 1000		Pa Pel. quantity	:	1000
cm3/1000 strokes Tolerance	: 3.0	+ c	m3/1000 strokes Tolerance	:	54.0
cm3/1000 strokes Check tolerance	: 3.0	+ c	m3/1000 strokes theck tolerance	:	0.5
cm3/1000s. Shutoff solenoid	: 3.0	+ c	m3/1000s.	:	2.2
Volt	: 12	4	olt	:	12
Rated speed rpm Aneroid pressure	: 750	Ī -	ECHANICAL SHUTOF		
hPa Del. quantity	: 350	+	ated speed rpm		2000
cm3/1000 strokes Tolerance	: 46.0	+ A	neroid pressure Pa		1000
cm3/1000 strokes	: 0.5	+ D	ra el. quantity m3/1000 strokes	•	1.5
Check tolerance cm3/1000s.	: 3.0	<u>}</u> ⊤	olerance m3/1000 strokes		1.5
Shutoff solenoid Volt	: 12	} c	heck tolerance		
		+ c	m3/1000s.	:	1.5

Shutoff solenoid Volt	;	12
ELECTR. SHUTOFF CONTROL LEVER, IC	)LE	STOP
Rated speed rpm Del. quantity	:	400
cm3/1000 strokes Tolerance	:	1.5
cm3/1000 strokes Check tolerance	:	1.5
cm3/1000s.	;	1.5
CHECKING LOAD-DEF		ENT
DELIVERY DIFFEREN	ICE	
Rated speed rpm	:	1500
Del. quantity cm3/1000 strokes Tolerance	:	35.0
cm3/1000 strokes Check tolerance	:	1.0
cm3/1000S. Shutoff solenoid	:	4.5
Volt	:	12
TIMING-DEVICE TRA	VEL	DIFFERENCE
Rated speed rpm Del. quantity	:	1500
cm3/1000 strokes Tolerance	:	2.6
cm3/1000 strokes Check tolerance	:	0.1
cm3/1000s. Shutoff solenoid	:	0.1
Volt	:	12
DELIVERY DIFFEREN	CE	
Rated speed rpm Del. quantity	:	1500
cm3/1000 strokes Tolerance	:	5.0
cm3/1000 strokes Check tolerance	:	3.0
cm3/1000S. Shutoff solenoid	:	3.0
Volt	:	12

#### PRESSURE DIFFERENCE

Rated speed rpm	:	1500
Supply pomp		
pressure bar	:	4.5
Tolerance hPa	:	0.6
Shutoff solenoid		
Volt	:	12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1500
Tolerance mm Check	:	0.7
tolerance mm	:	0.8
Shutoff solenoid Volt	:	12

# START TRANSITION

Rated speed rpm Del. quantity	:	380
cm3/1000 strokes	:	35.0
Tolerance cm3/1000 strokes	:	10.0
Shutoff solenoid	•	12

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	Kmm	: 3,3
Tolerance	mm	: +-0,1
Dimension	KF mm	: 6,0
Tolerance	mm	: +-0,2
Dimension	MS mm	: 1,3
Tolerance	mm	: +-0.2

# CONTROL LEVER POSITION SET

Control lever position YA mm	: 18,822,8
Control Lever	

position YB mm : 78,0..92,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.03.94 Test oil : ISO 4113

: 0 460 494 344 Part no. Pump designation: VE4/9F2250R472-1

Customer-spec. information

: PSA Customer

: XUD 9 TE-Y Motor

#### TEST BENCH REQUIREMENTS

Overflow

0.55 restriction mm :

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 3 Tolerance bar

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,3 Tolerance mm : +-0,02 : A

Outlet

### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

1500 Rated speed rpm Aneroid pressure

hPa 1000

Setting mm 4.1 Tolerance mm 0.2

Shutoff solenoid

Volt 12

#### SUPPLY PUMP PRESSURE

1500 Rated speed rpm Aneroid pressure

1000 hPa

5.7 Setting hPa Tolerance hPa 0.3

Shutoff solenoid

12 Volt

### FULL-LOAD DELIVERY WITH BOOST PRESSURE

1250 Rated speed rpm Aneroid pressure

1000 hPa

Del. quantity cm3/1000 strokes : 54.0

Tolerance cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.0

Check tolerance cm3/1000s. 3.0

Shutoff solenoid

12 Volt

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 500 Del. quantity

cm3/1000 strokes : 37.0

Tolerance cm3/1000 strokes 0.5

Shutoff solenoid Volt 12

Check tolerance cm3/1000s. 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

490 Rated speed rpm

Del. quantity	2.5	† Aneroid pressure	4000
cm3/1000 strokes	: 8.5	† hPa	: 1000
Tolerance cm3/1000 strokes	: 0.5	T sy tagget an	: 6.5
Shutoff solenoid	: 0.5	+ SV travel mm + Tolerance mm	: 0.4
Volt	: 12	+ Check	. 0.4
VOCE	. 12	tolerance mm	: 0.7
FULL-LOAD SPEED R	REGULATION	+ Shutoff solenoid	. 0.1
	.20032011	+ Volt	: 12
Rated speed rpm	: 2575	+	
Pressure hPa	: 1000	+ Rated speed rpm	: 900
Del. quantity		+ Aneroid pressure	
cm3/1000 strokes	: 14.0	† hPa	: 1000
Tolerance	2.0	<b>†</b>	4.2
cm3/1000 strokes	: 2.0	+ SV travel mm	: 1.2
Shutoff solenoid	: 12	+ Tolerance mm + Check	: 0.4
Volt	: 12	tolerance mm	: 0.7
STARTING FUEL DEL	TVERY	+ Shutoff solenoid	. 0.7
DIANTING FOLL DEL	IVERI	+ Volt	: 12
Rated speed rpm	: 150	1	, ,,
Del. quantity		SUPPLY PUMP PRESSI	URE CHARACTERISTIC
cm3/1000 strokes	: 52.0	+	
Tolerance		+ Rated speed rpm	: 2000
cm3/1000 strokes	: 15.0	+ Aneroid pressure	
Shutoff solenoid		+ hPa	: 1000
Volt	: 12	+ Supply pomp	
		+ pressure bar	: 6.8
SET GRADUATED STA		+ Tolerance hPa	: 0.3
CONTROL LEVER, ID	LE STOP	+ Shutoff solenoid + Volt	: 12
Rated speed rpm	: 200	I	• 14
Del. quantity	. 200	Rated speed rpm	: 900
cm3/1000 strokes	: 53.0	+ Aneroid pressure	
Tolerance		+ hPa	: 1000
cm3/1000 strokes	: 3.0	+ Supply pomp	
Shutoff solenoid		+ pressure bar	: 4.2
Volt	: 12	+ Tolerance hPa	: 0.3
		+ Shutoff solenoid	4.0
	ADT OF AFLICEDY	† Volt	: 12
LOAD-DEPENDENT ST	ARI OF DELIVERY	T OVERFLOW QUANTITY	
SETTING		I OVERFLOW GOANTITY	
TIMING-DEVICE TRA	VEL DIFFERENCE	Rated speed rpm	: 2150
TIME DEVICE THAT	TEC DITTENDE	+ Aneroid pressure	
Rated speed rpm	: 1500	+ hPa	: 1000
Del. quantity		+ Overflow quantity	
cm3/1000 strokes	: 2.6	+ ccm/10s	: 97.2
Tolerance		+ Tolerance	
cm3/1000 strokes	: 0.1	+ ccm/10s	: 41.6
Shutoff solenoid	: 12	Charle tallarana	
Volt	: 12	† Check tolerance † ccm/10s	: 41.6
		+ Shutoff solenoid	. 41.0
INJECTION-PUMP TE	ST SPECIFICATIONS	Volt	: 12
2.40 EQ 1 2 014 1 Q111 1 E1	J. J. 2011 2011 10110	+	· · · ·
TIMING DEVICE CHAP	RACTERISTIC	Rated speed rpm	: 500
		+ Aneroid pressure	
Rated speed rpm	: 2000	+ hPa	: 1000
		i	

Overflow quantity		+	Rated speed rpm	:	2150
ccm/10s Tolerance	: 63.8	1	Aneroid pressure hPa		1000
ccm/10s	: 22.2	I	Del. quantity	•	1000
		+	cm3/1000 strokes	:	50.1
Check tolerance	: 22.2	†	Tolerance		1.0
ccm/10s Shutoff solenoid	: 22.2	I	cm3/1000 strokes Check tolerance	•	1.0
Volt	: 12	1	cm3/1000s.	:	2.2
		+	Shutoff solenoid		
DELIVERY AND BREA	AKAWAY CHARACTERISTIC	+	Volt	:	12
Rated speed rpm	: 2575	Ī	Rated speed rpm	:	2000
Aneroid pressure	. 23.3	1	Aneroid pressure	•	2000
hPa	: 1000	+	hPa	:	1000
Del. quantity	44.0	+	Del. quantity		50.0
cm3/1000 strokes Tolerance	: 14.0	†	cm3/1000 strokes Tolerance	:	52.0
cm3/1000 strokes	: 2.0	I	cm3/1000 strokes	:	1.0
Check tolerance		+	Check tolerance	•	
cm3/1000s.	: 4.0	+	cm3/1000s.	:	2.2
Shutoff solenoid	42	†	Shutoff solenoid		40
Volt	: 12	İ	Volt	•	12
Rated speed rpm	: 2375	1	Rated speed rpm	:	500
Aneroid pressure		+	Aneroid pressure		
hPa	: 1000	+	hPa	:	1000
Del. quantity cm3/1000 strokes	: 39.0	†	Del. quantity cm3/1000 strokes		48.3
Tolerance	: 39.0	I	Tolerance	•	40.5
cm3/1000 strokes	: 5.0	+	cm3/1000 strokes	:	1.5
Check tolerance		Ť	Check tolerance		
cm3/1000s.	: 6.0	+	cm3/1000s.	:	3.0
Shutoff solenoid Volt	: 12	I	Shutoff solenoid Volt	•	12
1011		+	1011	•	. 2
Rated speed rpm	: 2750	+	Rated speed rpm	:	1250
Aneroid pressure	. 1000	†	Aneroid pressure		1000
hPa Del. quantity	: 1000	Ī	hPa Del. quantity	·	1000
cm3/1000 strokes	: 3.0	1	cm3/1000 strokes	:	54.0
Tolerance		+	Tolerance		
cm3/1000 strokes	: 3.0	+	cm3/1000 strokes	:	0.5
Check tolerance cm3/1000s.	: 3.0	Ī	Check tolerance cm3/1000s.		2.2
Shutoff solenoid	. 3.0	1	Shutoff solenoid	•	to • to
Volt	: 12	+	Volt	:	12
Orbid assid one	. 750	+			
Rated speed rpm Aneroid pressure	: 750	Ī	MECHANICAL SHUTOF	F	
hPa	: 350	1	HEGHARICAE GROTOL	•	
Del. quantity		+	Rated speed rpm	:	2000
cm3/1000 strokes	: 46.0	+	Aneroid pressure		1000
Tolerance cm3/1000 strokes	: 0.5	İ	hPa Del. quantity	:	1000
Check tolerance	. 0.5	Ţ	cm3/1000 strokes	:	1.5
cm3/1000s.	: 3.0	+	Tolerance		
Shutoff solenoid	40	+	cm3/1000 strokes	:	1.5
Volt	: 12	†	Check tolerance cm3/1000s.		1.5
		T	Cili37 10003.	•	1.0

Shutoff solenoid Volt	: 12	+ PRESSURE DIFFERENCE
		Rated speed rpm : 1500
ELECTR. SHUTOFF		+ Supply pomp
ONTROL LEVER, ID		pressure bar : 4.5 Tolerance hPa : 0.6
		Tolerance hPa 0.6
ated speed rpm	• 400	Shutoff solenoid
ateu speeu ripm	• 400	
el. quantity	<b>.</b>	+ Volt : 12
m3/1000 strokes	: 1.5	+
olerance		+ TIMING-DEVICE TRAVEL DIFFERENCE
m3/1000 strokes	: 1.5	1
heck tolerance		Rated speed rpm : 1500
m3/1000s.	: 1.5	+ Tolerance mm : 0.7
11111111111111111111111111111111111111	• 1• )	
		+ Check
		tolerance mm : 0.8
		Shutoff solenoid
		+ Volt : 12
		1
		Ţ
		T
	<del></del>	+ START TRANSITION
HECKING LOAD-DEP	ENDENT	+
TART OF DELIVERY		+ Rated speed rpm : 380
		Del. quantity
ELTHEDY NIEEEDEN	CE	+ cm3/1000 strokes : 35.0
ELIVERY DIFFEREN	LE	
		+ Tolerance
ated speed rpm	: 1500	+ cm3/1000 strokes : 10.0
el. quantity		+ Shutoff solenoid
m3/1000 strokes	• 35 0	+ Volt : 12
	. 22.0	, , , , ,
olerance	4.6	<u>†</u>
m3/1000 strokes		+
heck tolerance		
m3/1000s.	: 4.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS
hutoff solenoid		
	: 12	Dinamaian K an 177
olt	: 12	+ Dimension K mm : 3,3
		+ Tolerance mm : +-0,1
IMING-DEVICE TRA	VEL DIFFERENCE	Dimension KF mm : 6,0
		Tolerance mm : +-0,2
ated speed rpm	: 1500	Dimension MS mm : 1,3
		+ Tolerance mm : +-0,2
el. quantity		T TOTAL MAIN : T-U/C
m3/1000 strokes	: 2.6	t
olerance		+
m3/1000 strokes	: 0.1	+
neck tolerance	- <del>- •</del> •	CONTROL LEVER POSITION
n3/1000s.	: 0.1	SET
	. 0.1	T
nutoff solenoid		†
olt	: 12	†
		+ Control lever
LIVERY DIFFEREN	CF	position YA mm : 28,832,8
	-	1
تتنساء منسماسيد	. 1500	Control love
ited speed rpm	: 1500	+ Control lever
		position YB mm : 68,082,0
el. quantity	<i>-</i> -	+
	: 5.0	
m3/1000 strokes	: 5.0	
m3/1000 strokes olerance		Τ
el. quantity m3/1000 strokes olerance m3/1000 strokes		Ţ <del></del>
m3/1000 strokes olerance	: 3.0	Ţ
m3/1000 strokes olerance m3/1000 strokes	: 3.0	End of test-specification sheet
3/1000 strokes lerance 3/1000 strokes eck tolerance 3/1000s.		End of test-specification sheet
m3/1000 strokes blerance m3/1000 strokes meck tolerance	: 3.0	End of test-specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.06.95 Edition : ISO 4113 Test oil

: 0 460 494 419 Part no. Pump designation: VE4/9F2050R476-1

Customer-spec. information

: IVECO-SOFIM Customer Motor : 8140.97.2500 Power KW 85.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm 0.75

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar 130 3 Tolerance bar

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450 :

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 : +-0,02 Tolerance mm

Check

: +-0,04 tolerance mm

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1400

Aneroid pressure

hPa 1000

Setting mm 6.0 Tolerance mm 0.2

Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 1400 Aneroid pressure

1000 hPa

Setting hPa 6.4 Tolerance hPa 0.3

Shutoff solenoid

12 Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1200 Aneroid pressure

1000 hPa Del. quantity

cm3/1000 strokes : 68.0 Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.0

Check tolerance cm3/1000s.3.0

Shutoff solenoid 12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

500 Rated speed rpm

Del. quantity

cm3/1000 strokes : 42.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid 12 Volt

Check tolerance 3.0 cm3/1000s.

MO5

HOUSING-FIXED	IDLE	SPRING
RESIDUAL QUANT	TITY	SETTING

Rated speed rpm	:	5 <b>50</b>
Del. quantity cm3/1000 strokes	:	3.0
Tolerance	•	• • •
cm3/1000 strokes	:	2.5
Shutoff solenoid		
Volt	:	12

# FULL-LOAD SPEED REGULATION

00
0
0
12

#### STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity cm3/1000 strokes	:	62.0
Tolerance	•	
cm3/1000 strokes	:	12.0
Shutoff solenoid		
Volt	:	12

# LOAD-DEPENDENT START OF DELIVERY SETTING

# DELIVERY DIFFERENCE

Rated speed rpm	:	1000
Pressure hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	-20.0
Tolerance		
cm3/1000 strokes	:	1.0
Shutoff solenoid		
Volt	:	12

#### PRESSURE DIFFERENCE

Rated speed rpm Aneroid pressure	:	1000
hPa	:	1000
Del. quantity cm3/1000 strokes	:	-0.2
Tolerance cm3/1000 strokes	:	0.1
Shutoff solenoid Volt	:	12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm Aneroid pressure	:	1000
hPa	:	1000
Del. quantity cm3/1000 strokes	:	-0.8
Tolerance cm3/1000 strokes	:	0.1
Shutoff solenoid Volt	:	12

#### INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CH	ARAC	TERISTIC
Rated speed rpm Aneroid pressure	:	1800
hPa	:	1000
SV travel mm Tolerance mm Check	:	8.7 0.4
tolerance mm Shutoff solenoid Volt	:	0.7
	:	12
Rated speed rpm Aneroid pressure	:	1000
hPa	:	1000
SV travel mm Tolerance mm Check	: :	3.0 0.4
tolerance mm Shutoff solenoid	:	0.7
Volt	:	12
Rated speed rpm Aneroid pressure	:	2050
hPa	:	1000
SV travel mm Tolerance mm Check	:	10.0 0.4
tolerance mm	:	0.7
Shutoff solenoid Volt	:	12

Rated speed rpm : 1400 Aneroid pressure

: 1000

# SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm	:	2050
Aneroid pressure		
hPa	:	1000

Supply pomp pressure bar Tolerance hPa	: 8.7 : 0.3	<del>-</del>		Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	: 12	-	-	Rated speed rpm Aneroid pressure	:	2750
Rated speed rpm	: 600	4		hPa Del. quantity	:	1000
Aneroid pressure	: 1000		-	cm3/1000 strokes Tolerance	:	1.5
Supply pomp		-	-	cm3/1000 strokes	:	1.5
pressure bar Tolerance hPa	: 3.4 : 0.3	-	<u> </u>	Check tolerance cm3/1000s.	:	1.5
Shutoff solenoid Volt	: 12	+		Shutoff solenoid Volt	:	12
OVERFLOW QUANTITY		1	<b>-</b> -	Rated speed rpm	:	600
Rated speed rpm	: 500	+		Aneroid pressure hPa	:	350
Overflow quantity ccm/10s		1	_	LDA/		
Tolerance			- 1	HBA stroke mm	:	5.0
ccm/10s	: 22.2	-	- ,	Del. quantity cm3/1000 strokes	:	48.0
Check tolerance ccm/10s	: 22.2	†	- 1	Tolerance cm3/1000 strokes	:	0.5
Shutoff solenoid Volt	: 12	+		Check tolerance cm3/1000s.	:	2.5
Rated speed rpm	: 2050	†		Shutoff solenoid Volt	:	12
Aneroid pressure hPa	: 1000	1	-	Rated speed rpm	:	2050
Overflow quantity ccm/10s		1	- ,	Aneroid pressure		1000
Tolerance		1	- (	Del. quantity	•	
ccm/10s	: 41.6	‡	- '	cm3/1000 strokes Tolerance	:	69.5
Check tolerance ccm/10s	: 41.6	‡	- (	cm3/1000 strokes Check tolerance	:	1.5
Shutoff solenoid Volt	: 12	+		cm3/1000S. Shutoff solenoid	:	2.2
DELIVERY AND BREAM	KAWAY CHARACTER	RISTIC	· \ -	Volt	:	12
Rated speed rpm	: 2400	1		Rated speed rpm Aneroid pressure	:	1950
Aneroid pressure	: 1000	1	- 1	nPa Del. quantity	:	1000
Del. quantity		1	- (	cm3/1000 strokes	:	69.0
cm3/1000 strokes Tolerance		7	. (	Tolerance cm3/1000 strokes	:	1.5
cm3/1000 strokes Check tolerance	: 3.0	‡		Shutoff solenoid /olt	:	12
cm3/1000S. Shutoff solenoid	: 4.0	‡	. F	Rated speed rpm	:	600
Volt	: 12	<u> </u>		Aneroid pressure nPa	:	1000
Rated speed rpm Aneroid pressure	: 2600	1		Del. quantity	:	55.5
hPa	: 1000	1	. 7	Tolerance	:	2.0
Del. quantity cm3/1000 strokes	: 7.0	Ŧ		ms/ 1000 Strokes	•	۷.0

Shutoff solenoid Volt	: 12	Shutoff solenoid Volt : 12
Rated speed rpm Aneroid pressure		CHECKING LOAD-DEPENDENT
hPa Del. quantity	: 1000	START OF DELIVERY
cm3/1000 strokes Tolerance	: 68.0	DELIVERY DIFFERENCE
cm3/1000 strokes	: 0.5	Rated speed rpm : 1000 Aneroid pressure
Check tolerance cm3/1000s.	: 2.0	+ hPa : 1000
Shutoff solenoid Volt	: 12	+ Del. quantity + cm3/1000 strokes : -22.0
		+ Tolerance + cm3/1000 strokes : 3.0
ELECTR. SHUTOFF	U.S. STOP	- + Check tolerance + cm3/1000s. : 4.0
CONTROL LEVER, ID		+ Shutoff solenoid + Volt : 12
Rated speed rpm Del. quantity		+ TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes Tolerance		Rated speed rpm : 1000
cm3/1000 strokes Check tolerance		Aneroid pressure + hPa : 1000
cm3/1000s.	: 1.5	+ Del. quantity + cm3/1000 strokes : -0.8
FULL-LOAD STOP CO		+ Tolerance + cm3/1000 strokes : 0.1
Rated speed rpm Del. quantity		Check tolerance cm3/1000s. : 0.1
cm3/1000 strokes Tolerance		+ Shutoff solenoid + Volt : 12
cm3/1000 strokes Check tolerance		DELIVERY DIFFERENCE
cm3/1000s.	: 1.5	+ Rated speed rpm : 1000
		+ Aneroid pressure + hPa : 1000
RESIDUAL QUANTITY		- + Del. quantity + cm3/1000 strokes : 5.0
Rated speed rpm	: 900	+ Check tolerance + cm3/1000s. : 1.0
Del. quantity cm3/1000 strokes	: 1.0	+ Shutoff solenoid + Volt : 12
Tolerance cm3/1000 strokes	: 1.0	TIMING-DEVICE TRAVEL DIFFERENCE
Shutoff solenoid Volt	: 12	Rated speed rpm : 1000
		Aneroid pressure hPa : 1000
IDLE DELIVERY	. 75	+ Check + tolerance mm : 0.4
Rated speed rpm Del. quantity		+ Shutoff solenoid + Volt : 12
cm3/1000 strokes Tolerance		
cm3/1000 strokes	: 3.0	+ EXHAUST-GAS RECIRCULATION

Diskard and all and	4000
Rated speed rpm Del. quantity	: 1000
cm3/1000 strokes Tolerance	: 23.0
cm3/1000 strokes	: 1.0
Check tolerance cm3/1000s.	: 2.5
Shutoff solenoid Volt	: 12
START TRANSITION	
Rated speed rpm Del. quantity	: 350
cm3/1000 strokes	: 42.0
Tolerance cm3/1000 strokes Shutoff solenoid	: 6.0
Volt	: 12
Rated speed rpm	: 200
Del. quantity cm3/1000 strokes	: 62.0
Tolerance cm3/1000 strokes	: 12.0
Shutoff solenoid Volt	: 12
LDA/ HBA stroke mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm KSB travel mm	: 5.0 : 5,8 : +-0,2 : 1,3 : +-0,2 : 13,0
POTENTIOMETER SET	
1. measurement voltage Volt	: 5,0
1. measurement Voltage Volt	: 2,1
MICROSWITCH SET	
	: ARF 12,0
	: ARF 12,0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.04.95 Test oil : ISO 4113

Part no. : 0 460 494 332 Pump designation : VE4/9F2400R486

Customer—spec. information Customer : RENAULT Motor : G8T - 790 Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0 Tolerance mm : +-0,02

Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.2 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 37.4

Tolerance

cm3/1000 strokes : 0.5 Spread

Spi eau

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450 Del. quantity

Det. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2600

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : 3.0

Shutoff solenoid

Volt : 12

STARTING FUEL DEL	.IVE	RY	‡	Tolerance mm Check	:	0.4	
Rated speed rpm Del. quantity	:	100	<u> </u>	tolerance mm Shutoff solenoid	:	0.6	
cm3/1000 strokes Tolerance	:	60.0	1	Volt	:	12	
cm3/1000 strokes Shutoff solenoid	:	15.0	1	Rated speed rpm	:	750	
Volt	:	12	‡	SV travel mm Tolerance mm Check	:	1.0 1.2	
LOAD-DEPENDENT ST	'ADT	OE DELTVEDY	<u> </u>	tolerance mm Shutoff solenoid	:	1.2	
SETTING	ALL	OF DELIVERY	Ŧ	Volt	:	12	
DELIVERY DIFFEREN	CE		$\frac{1}{1}$	KSB/AFB Volt	:	12	
Rated speed rpm Del. quantity	:	1250	1	SUPPLY PUMP PRESS	URE	CHARACTERISTIC	
cm3/1000 strokes Tolerance	:	-7.1	<u> </u>	Rated speed rpm Supply pomp	:	2000	
cm3/1000 strokes	•	1.0	1	pressure bar	•	8.2	
Shutoff solenoid	•	,,,,	1	Tolerance hPa	:	0.3	
Volt		12	1	Shutoff solenoid	•	0.5	
70()	•	, _	1	Volt	:	12	
PRESSURE DIFFEREN	CE		<del>}</del>			, -	
			+	Rated speed rpm	:	750	
Rated speed rpm	:	1250	÷	Supply pomp			
Del. quantity			1	pressure bar	:	4.7	
cm3/1000 strokes		-0.2	7	Tolerance hPa	:	0.3	
Tolerance	•	0.2	$\mathbf{I}$	Shutoff solenoid	•	0.5	
		0.1	T	Volt		12	
cm3/1000 strokes	•	0.1	Ť	VOLL	•	12	
Shutoff solenoid Volt	:	12	Ŧ	OVERFLOW QUANTITY			
TIMING-DEVICE TRA	VEL	DIFFERENCE	Ī	Rated speed rpm	:	2300	
12.12.10			<b>+</b>	Overflow quantity			
Rated speed rpm	:	1250	+	ccm/10s	:	97.2	
Del. quantity		0.0	<b>T</b>	Tolerance	_	11	
cm3/1000 strokes	:	-0.8	†	ccm/10s	:	41.6	
Tolerance	_	0.4	T	Charle talamana			
cm3/1000 strokes	:	0.1	†	Check tolerance		11 (	
Shutoff solenoid		40	†	ccm/10s	:	41.6	
Volt	:	12	İ	Shutoff solenoid Volt	•	12	
			I	VOCE	•	14	
INJECTION-PUMP TES	ST S	SPECIFICATIONS	$\frac{1}{1}$	Rated speed rpm Overflow quantity	:	750	
TIMING DEVICE CHAP	RACT	TERISTIC	Ŧ	ccm/10s	:	63.8	
			t	Tolerance			
Rated speed rpm	:	2000	†	ccm/10s	:	22.2	
Tolerance mm	:	0.4	+				
Check			+	Check tolerance			
tolerance mm	:	0.6	+	ccm/10s	:	22.2	
Shutoff solenoid			+	Shutoff solenoid			
Volt	:	12	+	Volt	:	12	
	-	_	+				
Rated speed rpm	:	1000	<u> </u>	DELIVERY AND BREAK	<awa< td=""><td>Y CHARACTERIST</td><td>IC</td></awa<>	Y CHARACTERIST	IC
SV travel mm	:	1.0	+	Rated speed rpm	:	2600	

Del. quantity cm3/1000 strokes	:	23.0	<del> </del> cm	l. quantity 3/1000 strokes	:	36.5	
Tolerance cm3/1000 strokes Check tolerance	:	3.0	+ cm	lerance 3/1000 strokes eck tolerance	:	1.5	
cm3/1000s. Shutoff solenoid	:	4.0	<u>}</u> cm	3/1000s. utoff solenoid	:	2.3	
Volt	:	12		lt	:	12	
Rated speed rpm Del. quantity	:	2500		ted speed rpm l. quantity	:	1250	
cm3/1000 strokes Tolerance	:	35.5	+ cm	3/1000 strokes lerance	:	37.4	
cm3/1000 strokes Check tolerance	:	4.0	<u></u> ← cm	3/1000 strokes eck tolerance	:	0.5	
cm3/1000s. Shutoff solenoid	:	5.0	+ cm	3/1000s. utoff solenoid	:	2.3	
Volt	:	12	+ Vo	lt	:	12	
Rated speed rpm Del. quantity			‡			<del> </del>	
cm3/1000 strokes Tolerance	:		•	ECTR. SHUTOFF NTROL LEVER, ID	LE S	STOP	
cm3/1000 strokes Check tolerance	:	2.5		ted speed rpm	:	385	
cm3/1000s. Shutoff solenoid	:	2.5	+ cm	l. quantity 3/1000 strokes	:	1.5	
Volt	:	12	+ cm	lerance 3/1000 strokes	:	1.5	
Rated speed rpm Del. quantity			+ cm	eck tolerance 3/1000s.	:	1.5	
cm3/1000 strokes Tolerance		41.0		read 3/1000 strokes	:	5.0	
cm3/1000 strokes Check tolerance		1.0 2.3	FUI	LL-LOAD STOP CO	NTRO	L LEVER	
cm3/1000S. Shutoff solenoid Volt	:	12		ted speed rpm L. quantity	:	385	
Rated speed rpm	•	1000	+ cm:	3/1000 strokes lerance	:	1.5	
Del. quantity cm3/1000 strokes	•	37.7	+ cm	3/1000 strokes read	:	1.5	
Tolerance cm3/1000 strokes		1.5	+ cm.	3/1000 strokes	:	5.0	
Check tolerance cm3/1000s.	:	2.3	+ cm	3/1000s.	:	1.5	
Shutoff solenoid Volt	:	12		3/1000 strokes	:	5.0	
Rated speed rpm	:	2000	‡				
Del. quantity cm3/1000 strokes	:	40.3	‡				
Tolerance cm3/1000 strokes	:	1.0	T T	ECKING LOAD-DEP	ENDE	NT	
Check tolerance cm3/1000s.	:	2.3	+	ART OF DELIVERY			
Shutoff solenoid Volt	:	12	+	IVERY DIFFEREN		1250	
Rated speed rpm	:	750	† Rat	ed speed rpm	:	1250	

Del. quantity cm3/1000 strokes	:	-9.4
Tolerance cm3/1000 strokes Check tolerance	:	2.0
cm3/1000S. Shutoff solenoid	:	2.0
Volt	:	12
TIMING-DEVICE TRA	AVEL	DIFFERENCE
Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes	:	-0.8
Tolerance cm3/1000 strokes	:	0.1

Del. quantity		
cm3/1000 strokes	:	-0.8
Tolerance		
cm3/1000 strokes	:	0.1
Check tolerance		
cm3/1000s.	:	0.1
Shutoff solenoid		
Volt	:	12

# DELIVERY DIFFERENCE

Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes	:	5.0
Tolerance cm3/1000 strokes	:	3.0
Check tolerance cm3/1000s.	:	3.0
Shutoff solenoid Volt	:	12

# TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Tolerance mm	:	0.2
Check		
tolerance mm	:	0.3
Shutoff solenoid		
Volt	:	12

# EXHAUST-GAS RECIRCULATION

Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes	:	23.0	
Tolerance cm3/1000 strokes	:	0.5	
Check tolerance cm3/1000s. Shutoff solenoid	:	2.5	
Volt	:	12	

# START TRANSITION

Rated speed rpm	:	350
Del. quantity		
cm3/1000 strokes	:	30.0

Tolerance cm3/1000 strokes	:	15.0
Shutoff solenoid		
Volt	:	12

Rated speed rpm	:	200
Del. quantity cm3/1000 strokes	:	70.0
Tolerance cm3/1000 strokes	:	25.0

cm3/1000 strokes	:	25.0
Shutoff solenoid		
Volt	•	12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	Kmm	: 3,7
Tolerance		: +-0,1
Dimension		: 6,0
Tolerance	mm	: +-0,2
Dimension	MS mm	: 0,9
Tolerance	mm	: +-0,2

MICROSWITCH SET

: 0,8...3,0 mm

End of test-specification sheet

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Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.04.95 Test oil : ISO 4113

Part no. : 0 460 494 333 Pump designation : VE4/9F2400R486-1

Customer-spec. information Customer : RENAULT Motor : G8T - 790 CA

Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0 Tolerance mm : +-0,02

Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5 Tolerance mm : 0.2 Shutoff solenoid

Volt

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.2 Tolerance hPa : 0.3 Shutoff solenoid

Shutoti solenota

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 37.4

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2600

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : 3.0

Shutoff solenoid

Volt : 12

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STARTING FUEL DEL	.IVERY	+	Tolerance mm Check	:	0.4
Rated speed rpm Del. quantity	: 100	Ŧ	tolerance mm Shutoff solenoid	:	0.6
cm3/1000 strokes Tolerance	: 60.0	$\pm$	Volt	:	12
cm3/1000 strokes Shutoff solenoid	: 15.0	1	Rated speed rpm	:	750
Volt	: 12	+	SV travel mm Tolerance mm	:	1.0 1.2
		‡	Check tolerance mm	:	1.2
LOAD-DEPENDENT ST SETTING	ART OF DELIV	ERY +	Shutoff solenoid Volt	:	12
DELIVERY DIFFEREN	CE	Ŧ	KSB/AFB Volt	:	12
Rated speed rpm Del. quantity	: 1250	1	SUPPLY PUMP PRESS	URE	CHARACTERISTIC
cm3/1000 strokes Tolerance		‡	Rated speed rpm Supply pomp	:	
cm3/1000 strokes	: 1.0	1	pressure bar	•	8.2
Shutoff solenoid	• ,,,,	1	Tolerance hPa	:	0.3
	: 12	T		•	0.5
Volt	: 12	+	Shutoff solenoid		
		+	Volt	:	12
PRESSURE DIFFEREN	CE	+			
		1	Rated speed rpm	•	750
Dated aread are	: 1250	1	Supply pomp	•	, 30
Rated speed rpm	. 1230	T			, ,
Del. quantity		†	pressure bar	:	4.7
cm3/1000 strokes	: -0.2	+	Tolerance hPa	:	0.3
Tolerance		+	Shutoff solenoid		
cm3/1000 strokes	: 0.1	1	Volt		12
	• • • • • • • • • • • • • • • • • • • •		1011	•	
Shutoff solenoid	. 40	T	OVEREI OU OUANTTTV		
Volt	: 12	+	OVERFLOW QUANTITY		
		+			
TIMING-DEVICE TRA	VEL DIFFEREN	CE +	Rated speed rpm Overflow quantity		2300
Rated speed rpm Del. quantity	: 1250	‡	ccm/10s Tolerance	:	97.2
cm3/1000 strokes Tolerance	: -0.8	‡	ccm/10s	:	41.6
cm3/1000 strokes	: 0.1	+	Check tolerance		
Shutoff solenoid		1	ccm/10s	•	41.6
Volt	: 12	1	Shutoff solenoid	•	.,,,,
VOCE		1	Volt		12
		T	VOLL	•	12
INJECTION-PUMP TE	ST SPECIFICA	TIONS	Rated speed rpm Overflow quantity	:	750
TIMING DEVICE CHA	RACTERISTIC	1	ccm/10s Tolerance	:	63.8
Dated anned ann	: 2000	1	ccm/10s	:	22.2
Rated speed rpm		T	CCIII/ TUS	•	CC • C
Tolerance mm	: 0.4	†			
Check	_	+	Check tolerance		
tolerance mm	: 0.6	+	ccm/10s	:	22.2
Shutoff solenoid		+	Shutoff solenoid		
Volt	: 12	1	Volt	:	12
VOCC		<u>{</u>	1310	•	• •
	4000	†	DEL TUEDY 4410 DOES!		V 0114040777777
Rated speed rpm	: 1000	+	DELIVERY AND BREAK	(AWA	T CHARACTERISTIC
		+			
SV travel mm	: 1.0	+	Rated speed rpm	:	2600
- <del></del> ····		•	•		

Del. quantity cm3/1000 strokes	:	23.0		†	Del. quantity cm3/1000 strokes	:	36.5	
Tolerance cm3/1000 strokes Check tolerance	:	3.0		‡	Tolerance cm3/1000 strokes Check tolerance	:	1.5	
cm3/1000s. Shutoff solenoid	:	4.0		Ī	cm3/1000s. Shutoff solenoid	:	2.3	
Volt	:	12		<u> </u>	Volt	:	12	
Rated speed rpm Del. quantity	:	2500		‡	Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes Tolerance		35.5		+	cm3/1000 strokes Tolerance		37.4	
cm3/1000 strokes Check tolerance	:	4.0		<del>+</del> +	cm3/1000 strokes Check tolerance	:	0.5	
cm3/1000s. Shutoff solenoid	:	5.0		‡	cm3/1000s. Shutoff solenoid	:	2.3	
Voit Rated speed rpm	:	12 2800		Ŧ	Volt	•	12	
Del. quantity cm3/1000 strokes		2.5		+	ELECTR. SHUTOFF		·	
Tolerance cm3/1000 strokes		2.5		+	CONTROL LEVER, ID	LE S	STOP	
Check tolerance cm3/1000s.	:	2.5		<del> </del>  -	Rated speed rpm Del. quantity	:	385	
Shutoff solenoid Volt	:	12		†	cm3/1000 strokes Tolerance		1.5	
Rated speed rpm	:	2300		‡	cm3/1000 strokes Check tolerance cm3/1000s.	:	1.5 1.5	
Del. quantity cm3/1000 strokes Tolerance	:	41.0	-	Ī	Spread cm3/1000 strokes		5.0	
cm3/1000 strokes Check tolerance	:	1.0		+	FULL-LOAD STOP CO			
cm3/10005. Shutoff solenoid	:	2.3		‡	Rated speed rpm	:	385	
Volt	:	12	-	<del> </del> <del> </del>	Del. quantity cm3/1000 strokes	:	1.5	
Rated speed rpm Del. quantity	:	1000	-	†	Tolerance cm3/1000 strokes	:	1.5	
cm3/1000 strokes Tolerance cm3/1000 strokes	:	37.7 1.5	- - -	Ī	Spread cm3/1000 strokes Chack tolerance	:	5.0	
Check tolerance cm3/1000s.	:	2.3	-	+	cm3/1000s. Spread	:	1.5	
Shutoff solenoid Volt	:	12	-	+	cm3/1000 strokes	:	5.0	
Rated speed rpm	:	2000	<del>-</del>	<del> </del> <del> </del>				
Del. quantity cm3/1000 strokes	:	40.3	-	+				
Tolerance cm3/1000 strokes Check tolerance	:	1.0	-	Ī	CHECKING LOAD-DEP START OF DELIVERY		NT	
cm3/1000S. Shutoff solenoid	:	2.3			DELIVERY DIFFEREN			
Volt	:	12	-	-	Rated speed rpm	:	1250	
Rated speed rpm	:	750	4	}				

Del. quantity cm3/1000 strokes	:	-9.4			
Tolerance cm3/1000 strokes	;	2.0			
Check tolerance cm3/1000s.	:	2.0			
Shutoff solenoid Volt	:	12			
TIMING-DEVICE TRA	AVEL	DIFFERENCE			
Rated speed rpm Del. quantity	:	1250			
cm3/1000 strokes Tolerance	:	-0.8			
cm3/1000 strokes Check tolerance	:	0.1			
cm3/1000s. Shutoff solenoid	:	0.1			
Volt	:	12			
DELIVERY DIFFEREN	VCE				
Rated speed rpm Del. quantity	:	1250			
cm3/1000 strokes Tolerance	:	5.0			
cm3/1000 strokes Check tolerance	:	3.0			
cm3/1000s. Shutoff solenoid	:	3.0			
Volt	:	12			
TIMING-DEVICE TRA	VEL	DIFFERENCE			
Rated speed rpm Tolerance mm Check	:	1250 0.2			
tolerance mm Shutoff solenoid	:	0.3			
Volt	:	12			
EXHAUST-GAS RECIRCULATION					
Rated speed rpm	:	1250			
Del. quantity cm3/1000 strokes	:	23.0			
Tolerance cm3/1000 strokes Check tolerance	:	0.5			
cm3/1000s. Shutoff solenoid	:	2.5			
Volt	:	12			
START TRANSITION					
Rated speed rpm Del. quantity	:	350			
cm3/1000 strokes	:	30.0			

Tolerance cm3/1000 strokes : 15.0 Shutoff solenoid 12 Volt 200 Rated speed rpm : Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 strokes : 25.0 Shutoff solenoid Volt 12 ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : 3,7 Tolerance mm : +-0,1 Dimension KF mm : 6,0 Tolerance mm : +-0,2 Dimension MS mm : 0,9 Tolerance mm : +0,2 MICROSWITCH SET : 0,8...3,0 mm

End of test-specification sheet

: ARF 12,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 07.03.95 Edition Test oil : ISO 4113

: 0 460 494 405 Part no. Pump designation: VE4/9F2400R486-2

Customer-spec. information Customer : RENAULT : G8T - 790Motor 60.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

0.55 restriction mm

0.35 Inlet press. bar : 0.05 Tolerance bar

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar

Test lines : 1 680 750 073

Outside diameter : 6.00

2.00 x inside diameter: x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 2.5 Tolerance mm 0.2 Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm :

Setting hPa 6.2 Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

0.5

1250 Rated speed rpm : Del. quantity

cm3/1000 strokes : 37.4

Tolerance cm3/1000 strokes :

Spread cm3/1000 strokes : 2.5

Shutoff solenoid Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

450 Rated speed rpm Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

Rated speed rpm 2600

Del. quantity cm3/1000 strokes : 23.0

Tolerance

3.0 cm3/1000 strokes :

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 15.0

Shutoff solenoid			+			
Volt	:	12	†	SV travel mm	:	1.0
			†	Tolerance mm Check	:	1.2
			I	tolerance mm	•	1.2
LOAD-DEPENDENT ST	ART	OF DELIVERY	1	Shutoff solenoid	•	1.6
SETTING			+	Volt	:	12
			+			40
DELIVERY DIFFEREN	1¢E		†	KSB/AFB Volt	:	12
Rated speed rpm	:	1250	Ī	SUPPLY PUMP PRESS	HPF	CHARACTERISTIC
Del. quantity	•	1630	1	00/12/10/11/1/200	.011.	CHARACTERIOTIC
cm3/1000 strokes	:	-7.1	+	Rated speed rpm	:	2000
Tolerance		4.5	+	Supply pomp		
cm3/1000 strokes	:	1.0	†	pressure bar	:	8.2
Shutoff solenoid Volt		12	Ī	Tolerance hPa Shutoff solenoid	:	0.3
VOCC	•	12	I	Volt	:	12
PRESSURE DIFFEREN	ICE		1		•	
			+	Rated speed rpm	:	750
Rated speed rpm	:	1250	+	Supply pomp		, ,
Del. quantity cm3/1000 strokes		-0.2	†	pressure bar Tolerance hPa	:	4.7 0.3
Tolerance	•	-0.2	I	Shutoff solenoid	•	0.5
cm3/1000 strokes	:	0.1	1	Volt	:	12
Shutoff solenoid			+			
Volt	:	12	+	OVERFLOW QUANTITY		
TIMING-DEVICE TRA	VEL	NIECCDENCC	†	Dated speed nom		2300
ITHTING-DEATCE INV	VEL	DIFFERENCE	I	Rated speed rpm Overflow quantity		2300
Rated speed rpm	:	1250	1	ccm/10s	:	97.2
Del. quantity			+	Tolerance		
cm3/1000 strokes	:	-0.8	+	ccm/10s	:	41.6
Tolerance	_	0.4	†	Charle dalamana		
cm3/1000 strokes Shutoff solenoid	:	0.1	Ī	Check tolerance ccm/10s	•	41.6
Volt	:	12	Ţ	Shutoff solenoid	•	41.0
			+	Volt	:	12
			<del> +</del>			700
INJECTION-PUMP TE	ST	SPECIFICATIONS	†	Rated speed rpm	:	750
TIMING DEVICE CHA	ይልቦ	TERTSTIC	I	Overflow quantity ccm/10s	•	63.8
INTIMU PERTOR COM		, =1120120	1	Tolerance	•	<b></b>
Rated speed rpm	:	2000	+	ccm/10s	:	22.2
Tolerance mm	:	0.4	+			
Check		0.4	†	Check tolerance ccm/10s		22.2
tolerance mm Shutoff solenoid	:	0.6	Ī	Shutoff solenoid	•	22.2
Volt	:	12	1	Volt	:	12
			+			
Rated speed rpm	:	1000	+	DELIVERY AND BREAK	KAW	AY CHARACTERISTIC
CV desiral as	_	1.0	†	Datad speed		2600
SV travel mm Tolerance mm	:	0.4	Ī	Rated speed rpm Del. quantity	:	2000
Check	•	J. 7	Ţ	cm3/1000 strokes	:	23.0
tolerance mm	:	0.6	+	Tolerance		
Shutoff solenoid		4.0	+	cm3/1000 strokes	:	3.0
Volt	:	12	†	Check tolerance		/. O
Rated speed rpm	:	750	İ	cm3/1000s.	:	4.0
nated speed i pili	•	. 50	1.			

M19

Shutoff solenoid Volt	:	12	1	Shutoff solenoid Volt	:	12	
Rated speed rpm	:	2500		Rated speed rpm	:	1250	
Del. quantity cm3/1000 strokes Tolerance	:	35.5	+ (	Del. quantity cm3/1000 strokes Tolerance	:	37.4	
cm3/1000 strokes Check tolerance	:	4.0	+ (	cm3/1000 strokes Check tolerance	:	0.5	
cm3/1000s. Shutoff solenoid	:	5.0	+ (	cm3/1000s. Shutoff solenoid	:	2.3	
Volt	:	12		olt solenoid	:	12	
Rated speed rpm Del. quantity	:	2800	<u></u>	**************************************			
cm3/1000 strokes Tolerance	:	2.5	1	ELECTR. SHUTOFF CONTROL LEVER, ID	LE S	STOP	
cm3/1000 strokes Check tolerance	:	2.5	+	Rated speed rpm	:	385	
cm3/1000s. Shutoff solenoid	:	2.5		Del. quantity cm3/1000 strokes	:	1.5	
Volt	:	12	+ (	Tolerance cm3/1000 strokes	:	1.5	
Rated speed rpm Del. quantity	:	2300		Check tolerance cm3/1000S.	:	1.5	
cm3/1000 strokes Tolerance		41.0	‡ F	FULL-LOAD STOP CO	NTRO	DL LEVER	
Check tolerance	:	1.0 2.3		Rated speed rpm	:	385	
cm3/1000S. Shutoff solenoid Volt	:	12	+ 0	Del. quantity cm3/1000 strokes Tolerance	:	1.5	
Rated speed rpm	:	1000	+ (	m3/1000 strokes Check tolerance	:	1.5	
Del. quantity cm3/1000 strokes	-	37.7	•	m3/1000s.	:	1.5	
Tolerance cm3/1000 strokes	:	1.5	<u> </u>				
Check tolerance cm3/1000s.	:	2.3	‡				
Shutoff solenoid Volt	:	12	<del> </del> -	HECKING LOAD-DEP	ENDE	NT	
Rated speed rpm	:	2000	+	TART OF DELIVERY			
Del. quantity cm3/1000 strokes	:	40.3	+	ELIVERY DIFFEREN		4050	
Tolerance cm3/1000 strokes	:	1.0	+ 0	ated speed rpm el. quantity			
Check tolerance cm3/1000s.	:	2.3	<del> </del>	m3/1000 strokes olerance m3/1000 strokes			
Shutoff solenoid Volt	:	12	+ c	heck tolerance m3/1000s.	•	2.0	
Rated speed rpm Del. quantity	:	750	+ s	hutoff solenoid	:	12	
cm3/1000 strokes Tolerance	:	36.5	+	IMING-DEVICE TRA	/EL		
cm3/1000 strokes Check tolerance	:	1.5	+	ated speed rpm			
cm3/1000s.	:	2.3	+	,			

Del. quantity			
cm3/1000 strokes	:	-0.8	
Tolerance	·		
cm3/1000 strokes	:	0.1	
Check tolerance			
cm3/1000s.	:	0.1	
Shutoff solenoid			
Volt	:	12	
DELIVERY DIFFEREN	ICE		
Rated speed rpm	•	1250	
Del. quantity	ĸ	1230	
cm3/1000 strokes	:	5.0	
Tolerance	•	J.0	
cm3/1000 strokes	:	3.0	
Check tolerance	•		
cm3/1000s.	:	3.0	
Shutoff solenoid			
Volt	:	12	
********		A T T T T T T T T T T T T T T T T T T T	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm	:	1250	
Tolerance mm	•	0.2	
Check	•	0.2	
tolerance mm	:	0.3	
Shutoff solenoid	-		
Volt	•	12	
1011	•	'	
7011	•		
	· ·		
EXHAUST-GAS RECIR	CUL		
EXHAUST-GAS RECIR		ATION	
EXHAUST-GAS RECIR		ATION	
EXHAUST-GAS RECIR	:	ATION	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity	:	ATION 1250	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes	:	ATION 1250	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:	ATION 1250 23.0 0.5	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	ATION 1250 23.0	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	ATION 1250 23.0 0.5 2.5	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	ATION 1250 23.0 0.5	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	ATION 1250 23.0 0.5 2.5	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	ATION 1250 23.0 0.5 2.5	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	ATION 1250 23.0 0.5 2.5	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity	:	ATION  1250  23.0  0.5  2.5  12	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes	:	ATION  1250  23.0  0.5  2.5  12	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	ATION  1250  23.0  0.5  2.5  12  350  30.0	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	ATION  1250  23.0  0.5  2.5  12	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	ATION  1250  23.0  0.5  2.5  12  350  30.0  15.0	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	ATION  1250  23.0  0.5  2.5  12  350  30.0	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	350 30.0 15.0 12	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Sheek tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	ATION  1250  23.0  0.5  2.5  12  350  30.0  15.0	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Sheek tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	350 30.0 15.0 12	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Sheek tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	350 30.0 15.0 12	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Sheek tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	350 30.0 15.0 12	

Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +-0,1
Dimension KF mm : KOT
Dimension MS mm : 0,9
Tolerance mm : +-0,2

MICROSWITCH SET

mm : 0,8...3,0 : ARF 12,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 21.03.95 Test oil : ISO 4113

Part no. : 0 460 494 406 Pump designation : VE4/9F2400R486-3

Customer-spec. information
Customer : RENAULT
Motor : G8T-790 CA
Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

**REMARKS** 

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.2 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 37.4
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutcff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2600
Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid			+			
Volt	:	12	+	SV travel mm	:	1.0
			+	Tolerance mm	:	1.2
			+	Check		
			+	tolerance mm	:	1.2
LOAD-DEPENDENT ST	ART	OF DELIVERY	†	Shutoff solenoid		
SETTING			+	Volt	:	12
			†			4.0
DELIVERY DIFFEREN	ICE		†	KSB/AFB Volt	:	12
O A - d		4250	†	CURRLY RUMP PRESS		CHARACTERICTIC
Rated speed rpm	:	1250	†	SUPPLY PUMP PRESS	UKE	CHARACTERISTIC
Del. quantity cm3/1000 strokes		-7.1	<b>†</b>	Dated speed spe		2000
Tolerance	•	-7.1	Ţ	Rated speed rpm Supply pomp	:	2000
cm3/1000 strokes	:	1.0	I	pressure bar		8.2
Shutoff solenoid	•	1.0	I	Tolerance hPa	:	0.3
Volt		12	$\mathbf{I}$	Shutoff solenoid	•	0.5
VOCC	•	14	1	Volt		12
PRESSURE DIFFEREN	ICE		1	1000	•	
THEODORG DEFFEREN			1	Rated speed rpm	:	750
Rated speed rpm	:	1250	<b>1</b>	Supply pomp	•	
Del. quantity	-		1	pressure bar	:	4.7
cm3/1000 strokes	:	-0.2	+	Tolerance hPa	:	0.3
Tolerance			+	Shutoff solenoid		
cm3/1000 strokes	:	0.1	+	Volt	:	12
Shutoff solenoid			+			
Volt	:	12	+	OVERFLOW QUANTITY		
			+			
TIMING-DEVICE TRA	VEL	DIFFERENCE	†	Rated speed rpm		2300
		4050	†	Overflow quantity		07.0
Rated speed rpm	:	1250	†	ccm/10s	:	97.2
Del. quantity		0.0	†	Tolerance		10 1
cm3/1000 strokes	:	-0.8	†	ccm/10s	:	41.6
Tolerance cm3/1000 strokes		0.1	Ī	Check tolerance		
Shutoff solenoid	•	<b>U.</b> 1	I	ccm/10s		41.6
Volt		12	I	Shutoff solenoid	•	41.0
VOCC	•	12	I	Volt	•	12
		_,	\	1011	•	,
INJECTION-PUMP TE	ST	SPECIFICATIONS	1	Rated speed rpm	:	750
			1	Overflow quantity		
TIMING DEVICE CHA	RAC	TERISTIC	+	ccm/10s	:	63.8
			+	Tolerance		
Rated speed rpm	:	2000	+	ccm/10s	:	22.2
Tolerance mm	:	0.4	+			
Check		_	+	Check tolerance		
tolerance mm	:	0.6	+	ccm/10s	:	22.2
Shutoff solenoid		4.0	†	Shutoff solenoid		45
Volt	:	12	†	Volt	:	12
<b>5</b> 4		4000	Ť	DEL THEON AND DOEAL	< A 1 1 A	V CHARACTERICITE
Rated speed rpm	:	1000	<b>†</b>	DELIVERY AND BREAK	KAWP	IT CHARACTERISTIC
CV topical ma		1.0	Ī	Rated speed rpm	:	2600
SV travel mm Tolerance mm	•	0.4	I	Del. quantity	•	2000
Check	•	0.4	I	cm3/1000 strokes	•	23.0
tolerance mm	•	0.6	1	Tolerance	•	
Shutoff solenoid	•		1	cm3/1000 strokes	:	3.0
Volt	:	12	+	Check tolerance	-	- : <del>-</del>
	•	· <del>-</del>	1	cm3/1000s.	:	4.0
Rated speed rpm	:	750	+			

Shutoff solenoid Volt	:	12	‡	Shutoff solenoid Volt	:	12	
Rated speed rpm Del. quantity	:	2500	<u> </u>	Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes Tolerance	:	35.5	<u> </u>	cm3/1000 strokes Tolerance	:	37.4	
cm3/1000 strokes Check tolerance	:	4.0	‡	cm3/1000 strokes Check tolerance		0.5	
cm3/1000s. Shutoff solenoid		5.0	‡	cm3/1000s. Shutoff solenoid	:	2.3	
Volt	:	12	+	Volt	:	12	
Rated speed rpm Del. quantity			‡				
cm3/1000 strokes Tolerance		2.5	‡	ELECTR. SHUTOFF CONTROL LEVER, I	DLE ST	TOP	
cm3/1000 strokes Check tolerance		2.5	‡	Rated speed rpm	:	385	
cm3/1000s. Shutoff solenoid	:	2.5 12	‡	Del. quantity cm3/1000 strokes	:	1.5	
Volt Rated speed rpm	•		Ī	Tolerance cm3/1000 strokes Check tolerance	:	1.5	
Del. quantity cm3/1000 strokes			Ţ	cm3/1000s. Spread	:	1.5	
Tolerance cm3/1000 strokes		1.0	+	cm3/1000 strokes	:	5.0	
Check tolerance cm3/1000s.		2.3	‡	FULL-LOAD STOP CO	NTROL	LEVER	
Shutoff solenoid Volt	:	12	+	Rated speed rpm Del. quantity			
Rated speed rpm	:	1000	‡	cm3/1000 strokes Tolerance		1.5	
Del. quantity cm3/1000 strokes	:	37.7	†	cm3/1000 strokes Spread		1.5	
Tolerance cm3/1000 strokes	:	1.5	‡	cm3/1000 strokes Check tolerance cm3/1000s.	:	5.0 1.5	
Check tolerance cm3/1000s. Shutoff solenoid	:	2.3	Ī	Spread cm3/1000 strokes	•	5.0	
Volt	:	12	1	cms/ 1000 strokes	•	J.0	
Rated speed rpm Del. quantity	:	2000	‡				
cm3/1000 strokes Tolerance	:	40.3	‡				
cm3/1000 strokes Check tolerance	:	1.0	‡	CHECKING LOAD-DEP START OF DELIVERY		۱T	
cm3/1000s. Shutoff solenoid	:	2.3	‡	DELIVERY DIFFEREN	CE		
Volt	:	12	‡	Rated speed rpm	:	1250	
Rated speed rpm Del. quantity cm3/1000 strokes	•	750 36.5	Ī	Del. quantity cm3/1000 strokes Tolerance	:	-9.4	
Tolerance	:	1.5	I	cm3/1000 strokes Check tolerance	:	2.0	
Check tolerance cm3/1000s.	:	2.3	‡	cm3/1000s.	:	2.0	

Shutoff solenoid Volt	:	12	
TIMING-DEVICE TRA	AVEL	DIFFERENCE	
Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes Tolerance	:	-0.8	
cm3/1000 strokes Check tolerance	:	0.1	
cm3/1000S. Shutoff solenoid	:	0.1	
Volt	:	12	
DELIVERY DIFFEREN	VCE		
Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes Tolerance	:	5.0	
cm3/1000 strokes Check tolerance	:	3.0	
cm3/1000s. Shutoff solenoid	:	3.0	
Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm Tolerance mm Check	:	1250 0.2	
tolerance mm Shutoff solenoid	:	0.3	
Volt	:	12	
EXHAUST-GAS RECIR	CULA	TION	
Rated speed rpm	:	1250	
Del. quantity cm3/1000 strokes	:	23.0	
Tolerance cm3/1000 strokes	:	0.5	
Check tolerance cm3/1000S.	:	2.5	
Shutoff solenoid Volt	:	12	
START TRANSITION			
Rated speed rpm	:	350	
Del. quantity cm3/1000 strokes	:	30.0	
Tolerance cm3/1000 strokes	:	15.0	
Shutoff solenoid Volt		12	

Rated speed rpm : 200
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +-0,1
Dimension KF mm : KOT
Dimension MS mm : 0,9
Tolerance mm : +-0,2

MICROSWITCH

SET

mm : 0,8...3,0 : ARF 12,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.01.96 Edition Test oil : ISO 4113

Part no. : 0 460 414 096 Pump designation: VE4/11F2100R493

Customer-spec. information Customer : FIAT-AUTO : M711 KT 19.D Motor 72.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 55 Tolerance °C

Overflow

0.75 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 116 assembly

Opening pressure

207 Tolerance bar 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1500 Rated speed rpm Aneroid pressure hPa 1000

Setting mm 6.2 Tolerance mm 0.2 Shutoff solenoid

12 Volt

KSB/AFB Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 1500

Aneroid pressure

1000 hPa

Setting hPa 7.3 Tolerance hPa 0.2 Shutoff solenoid 12 Volt

KSB/AFB Volt 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

1750 Rated speed rpm

Aneroid pressure

1000

Del. quantity

cm3/1000 strokes : 63.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : Check tolerance

cm3/1000s.

4.5

Shutoff solenoid

12 Volt

12 KSB/AFB Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

4.0

Rated speed rpm 750

Del. quantity

cm3/1000 strokes : 44.5

Tolerance

cm3/1000 strokes :

0.5

Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s.4.5

KSB/AFB Volt 12

IDLE SETTING

Rated speed rpm	: 450	+ Del. quantity
Del. quantity		+ cm3/1000 strokes : −9.0
cm3/1000 strokes	: 8.0	† Tolerance
Tolerance		+ cm3/1000 strokes : 1.0
cm3/1000 strokes	: 2.0	+ Shutoff solenoid
Shutoff solenoid		† Volt : 12
Volt	: 12	<del>}</del>
Spread		→ KSB/AF6 Volt : 12
cm3/1000 strokes	: 6.0	+
Check tolerance		+ PRESSURE DIFFERENCE
cm3/1000s.	: 6.5	<del> </del>
		+ Rated speed rpm : 1500
KSB/AFB Volt	: 12	+ Del. quantity
		+ cm3/1000 strokes : -0.2
		+ Tolerance
FULL-LOAD SPEED F	REGULATION	+ cm3/1000 strokes : 0.1
		+ Shutoff solenoid
Rated speed rpm	: 2400	+ Volt : 12
Pressure hPa	: 1000	
Del. quantity		KSB/AFB Volt : 12
cm3/1000 strokes	: 32.0	1
Tolerance	. 32.3	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes	: 2.0	THING PERIOD WARE DIVENDE
Shutoff solenoid	. 2.0	Rated speed rpm : 1500
Volt	: 12	Del. quantity
VOCC	. 12	cm3/1000 strokes : -0.6
KSB/AFB Volt	: 12	Tolerance
KSB/AFB VOLL	. 12	cm3/1000 strokes : 0.1
STARTING FUEL DEL	TUEDY	Shutoff solenoid
STARTING FUEL DEL	TAEKI	Volt : 12
Dottod amond nom	: 100	T VOLC . 12
Rated speed rpm	: 100	KSB/AFB Volt : 12
Del. quantity	. 70.0	+ KSB/AFB Volt : 12
cm3/1000 strokes	: 70.0	Ť
Tolerance	: 15.0	TALLECTION DUMP TECT CRECIFICATIONS
cm3/1000 strokes	: 15.0	INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid	: 12	TIMING DELITCE CHARACTERICTIC
Volt	; 12	TIMING DEVICE CHARACTERISTIC
KCD /AFD No.14	. 13	T Dated aread are 1 2000
KSB/AFB Volt	: 12	Rated speed rpm : 2000
OFT CRACHATER OTA	DITTALC DEL TUEDU	Aneroid pressure
SET GRADUATED STA		+ hPa : 1000
CONTROL LEVER, ID	LE STOP	† 64 to 24 t
Dakad saa t	400	+ SV travel mm : 8.1
Rated speed rpm	: 100	Tolerance mm : 0.4
Del. quantity	72.0	+ Check
cm3/1000 strokes	: 32.0	tolerance mm : 0.9
Tolerance		+ Shutoff solenoid
cm3/1000 strokes	: 1.0	+ Volt : 12
Shutoff solenoid	4.0	†
Volt	: 12	+ KSB/AFB Volt : 12
	4.5	† 2
KSB/AFB Volt	: 12	+ Rated speed rpm : 750
		+ Aneroid pressure
		+ hPa : 1000
LOAD-DEPENDENT ST.	ART OF DELIVERY	† a
		+ SV travel mm : 2.3
SETTING		
		Tolerance mm : 0.4
SETTING DELIVERY DIFFEREN		Tolerance mm : 0.4 Check
		Tolerance mm : 0.4

Shutoff solenoid Volt	: 12	‡	Check tolerance			
KSB/AFB Volt	: 12	‡	ccm/10s Shutoff solenoid	:	41.6	
Rated speed rpm	: 450	1	Volt	:	12	
Aneroid pressure	: 1000	Ì	KSB/AFB Volt	:	12	
SV travel mm	: 3.0	Ŧ	Rated speed rpm Aneroid pressure	:	750	
Tolerance mm	: 0.1	Ŧ	hPa	:	1000	
Check tolerance mm	: 1.0	Ŧ	Overflow quantity ccm/10s	:	111.1	
Shutoff solenoid Volt	: 12	Ŧ	Tolerance ccm/10s	:	22.2	
Rated speed rpm	: 1000	Ŧ	Check tolerance		22.2	
Aneroid pressure hPa	: 1000	Ŧ	ccm/10s Shutoff solenoid	•	22.2 12	
SV travel mm	: 4.6	Ī	Volt	i	12	
Tolerance mm Check	: 1.0	‡	KSB/AFB Volt	:	12	
tolerance mm Shutoff solenoid	: 1.2	+	DELIVERY AND BREA	KAW	AY CHARACTER	ISTIC
Volt	: 12	†	Rated speed rpm Aneroid pressure	:	2400	
SUPPLY PUMP PRESS	URE CHARACTERISTI	c ‡	hPa Del. quantity	:	1000	
Rated speed rpm Aneroid pressure	: 2100	1	cm3/1000 strokes Tolerance	:	32.0	
hPa Supply pomp	: 1000	<u> </u>	cm3/1000 strokes Check tolerance	:	2.0	
pressure bar	: 8.5	+	cm3/1000s.	:	6.0	
Tolerance hPa Shutoff solenoid	: 0.3	‡	Shutoff solenoid Volt	:	12	
Volt	: 12	†	KSB/AFB Volt	:	12	
KSB/AFB Volt	: 12	‡	Rated speed rpm	:	2500	
Rated speed rpm Aneroid pressure	: 750	‡	Aneroid pressure hPa	:	1000	
hPa Supply pomp	: 1000	‡	Del. quantity cm3/1000 strokes	:	20.0	
pressure bar Tolerance hPa	: 5.5 : 0.3	‡	Check tolerance cm3/1000s.	:	6.0	
Shutoff solenoid Volt	: 12	+	Shutoff solenoid Volt	:	12	
KSB/AFB Volt	: 12	‡	KSB/AFB Volt	:	12	
OVERFLOW QUANTITY		<b>†</b>	Rated speed rpm	:	2300	
Rated speed rpm	: 2100	‡	Aneroid pressure hPa	:	1089	
Aneroid pressure hPa	: 1000	‡	**	:	44.0	
Overflow quantity cm/10s	: 138.8	‡	Tolerance cm3/1000 strokes	:	4.0	
Tolerance ccm/10s	: 41.6	‡	Shutoff solenoid Volt	:	12	

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			+ Tolerance
KSB/AFB Volt	:	12	cm3/1000 strokes : 2.5 Check tolerance
Rated speed rpm Aneroid pressure		2650	cm3/1000s. : 4.0  Shutoff solenoid
hPa Del. quantity	:	1000	Volt : 12
cm3/1000 strokes Tolerance	:	1.5	KSB/AFB Volt : 12
cm3/1000 strokes Check tolerance	:	1.5	Rated speed rpm : 750 Aneroid pressure
cm3/1000s. Shutoff solenoid	:	1.5	hPa : 1000 Del. quantity
Volt	:	12	cm3/1000 strokes : 75.0 Tolerance
KSB/AFB Volt	:	12	cm3/1000 strokes : 4.5 Shutoff solenoid
Rated speed rpm Aneroid pressure	:	750	Volt : 12
hPa Del. quantity	:	400	KSB/AFB Volt : 12
cm3/1000 strokes Tolerance	:	64.0	Rated speed rpm : 1750 Aneroid pressure
cm3/1000 strokes Check tolerance	:	0.5	hPa : 1000 Del. quantity
cm3/1000S. Shutoff solenoid	:	4.0	cm3/1000 strokes : 63.0 Tolerance
Volt	:	12	cm3/1000 strokes : 0.5 Check tolerance
KSB/AFB Volt	:	12	+ cm3/1000s. : 3.5 + Shutoff solenoid
Rated speed rpm Aneroid pressure	:		+ Volt : 12
hPa Del. quantity	:	1000	† <del></del>
cm3/1000 strokes Tolerance		61.0	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
cm3/1000 strokes Check tolerance	:	2.0	Rated speed rpm : 450
cm3/1000S. Shutoff solenoid	:	4.0	Del. quantity cm3/1000 strokes : 1.5
Volt KSB/AFB Volt	:	12 12	+ Tolerance + cm3/1000 strokes : 1.5 + Check tolerance
	:		cm3/1000s. : 1.5
Rated speed rpm Del. quantity cm3/1000 strokes		47.5	FULL-LOAD STOP CONTROL LEVER
Tolerance		3.0	Rated speed rpm : 450
Shutoff solenoid	•	12	cm3/1000 strokes : 1.5
KSB/AFB Valt	:	12	cm3/1000 strokes : 1.5 Check tolerance
	•		cm3/1000s. : 1.5
ESTEC SDEED FOR	:	1500	
Rated speed rpm Aneroid pressure hPa	:	1500 1000	IDLE DELIVERY
	:	1000 1000 63.5	IDLE DELIVERY Rated speed rpm : 500

Del. quantity		+ Rated speed rpm	: 1500
cm3/1000 strokes Tolerance	: 1.5	+ Del. quantity + cm3/1000 strokes	: 5.0
cm3/1000 strokes	: 1.5	+ Tolerance	
Check tolerance	4 =	cm3/1000 strokes	: 1.0
cm3/1000s. Shutoff solenoid	: 1.5	+ Check tolerance + cm3/1000s.	: 1.0
Volt	: 12	Shutoff solenoid	. 7.0
		+ Volt	: 12
KSB/AFB Volt	: 12	† + KSB/AFB Volt	: 12
Rated speed rpm	: 470	+ RSB/AIB VOCE	• 16
Del. quantity	7.0	TIMING-DEVICE TRA	VEL DIFFERENCE
cm3/1000 strokes Tolerance	: 3.0	Rated speed rpm	: 1500
	: 3.0	+ Tolerance mm	: 0.4
Check tolerance		∔ Check	6.4
cm3/1000S. Shutoff solenoid	: 4.0	tolerance mm Shutoff solenoid	: 0.4
Volt	: 12	- Volt	: 12
	40	+	4.0
KSB/AFB Volt	: 12	† KSB/AFB Volt	: 12
		<del> </del>	
		EXHAUST-GAS RECIR	CULATION
***************************************		Rated speed rpm	: 1000
CHECKING LOAD-DEF	PENDENT	+ Del. quantity	. ,000
START OF DELIVERY	Y	+ cm3/1000 strokes	: 17.9
DELIVERY DIFFEREN	NCF	+ Tolerance + cm3/1000 strokes	: 1.0
ACCIACIA DILLENCI	<b>10</b> L	+ Check tolerance	
Rated speed rpm	: 1500	+ cm3/1000s.	: 2.5
Del. quantity cm3/1000 strokes	: -9.0	+ Shutoff solenoid + Volt	: 12
Tolerance		+	
cm3/1000 strokes	: 3.0	+ KSB/AFB Volt	: 12
Check tolerance cm3/1000s.	: 4.0	t START TRANSITION	
Shutoff solenoid		<del>}</del>	
Volt	: 12	+ Rated speed rpm	: 450
KSB/AFB Volt	: 12	+ Del. quantity + cm3/1000 strokes	: 60.0
NOOTALD VOCE	• • •	+ Tolerance	
TIMING-DEVICE TRA	AVEL DIFFERENCE	cm3/1000 strokes	: 15.0
Rated speed rpm	: 1500	+ Shutoff solenoid + Volt	: 12
Del. quantity	. 1000	+	
cm3/1000 strokes	: -0.6	+ KSB/AFB Volt	: 12
Tolerance cm3/1000 strokes	: 0.1	İ	
Check tolerance	. 0.1	Rated speed rpm	: 250
cm3/1000s.	: 0.1	+ Del. quantity	
Shutoff solenoid Volt	: 12	+ cm3/1000 strokes + Tolerance	: 85.0
VOLL	. 16	cm3/1000 strokes	: 15.0
KSB/AFB Volt	: 12	+ Shutoff solenoid	
NEI THEOV ATEEDEN	וכב	† Volt	: 12
DELIVERY DIFFEREN	ILE	KSB/AFB Volt	: 12
		1	· <del>-</del>

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : K1
Dimension KF mm : 5,4
Tolerance mm : +-0,2

POTENTIOMETER

SET

1. measurement

voltage Volt : 5,0
1. measurement

voltage Volt : 2,0

**MICROSWITCH** 

SET

mm : GST 76,9

: ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 43,0..45,0

Control lever

position YB mm : 54,8..65,2

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.03.95 : ISO 4113 Test oil

: 0 460 414 125 Part no. Pump designation: VE4/11F2100R493-1

Customer-spec. information : FIAT-AUTO Customer : M711 NT 19.L Motor Power KW 70.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

55 temperature °C Tolerance °C 1

Overflow

0.75 restriction mm

0.35Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 116 assembly

Opening pressure

207 bar 3 Tolerance bar

Test lines : 1 680 750 073

6.00 Outside diameter :

2.00 x inside diameter : 450 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1500 Rated speed rom Aneroid pressure

1000

Setting mm 6.2 Tolerance mm 0.2 Shutoff solenoid

Volt 12

KSB/AFB Volt 12

SUPPLY PUMP PRESSURE

1500 Rated speed rpm

Aneroid pressure

hPa 1000

Setting hPa 7.3 Tolerance hPa 0.2

Shutoff solenoid

12 Volt

12 KSB/AFB Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1750 Aneroid pressure 1000 Del. quantity cm3/1000 strokes : 63.0 Tolerance cm3/1000 strokes : 0.5 Spread

cm3/1000 strokes : 4.0

Check tolerance 4.5 cm3/1000s. Shutoff solenoid Volt 12

KSB/AFB Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

750 Rated speed rpm Del. quantity cm3/1000 strokes : 44.5 Tolerance

cm3/1000 strokes

0.5 Shutoff solenoid 12

Volt Check tolerance cm3/1000s.

4.5

12 KSB/AFB Volt

IDLE SETTING

Rated speed rpm	: 450	† Del. quantity
Del. quantity		+ cm3/1000 strokes : −9.0
cm3/1000 strokes	: 8.0	+ Tolerance
Tolerance	2.0	+ cm3/1000 strokes : 1.0
cm3/1000 strokes	: 2.0	+ Shutoff solenoid
Shutoff solenoid	. 42	† Volt : 12
Volt	: 12	Ken (Asn. Val.)
Spread	: 6.0	KSB/AFB Volt : 12
cm3/1000 strokes Check tolerance	: 6.0	DOCCOURS DIFFERENCE
cm3/1000s.	: 6.5	+ PRESSURE DIFFERENCE
cms/ rouns.	: 6.3	Rated speed rpm : 1500
KSB/AFB Volt	: 12	Del. quantity
ROB/AID VOCE		- cm3/1000 strokes : -0.2
		+ Tolerance
FULL-LOAD SPEED R	REGULATION	+ cm3/1000 strokes : 0.1
. 022 20//0 0/ 220 1/	(2002/1/2011	+ Shutoff solenoid
Rated speed rpm	: 2400	+ Volt : 12
Pressure hPa	: 1000	+
Del. quantity		+ KSB/AFB Volt : 12
cm3/1000 strokes	: 32.0	+
Tolerance		TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes	: 2.0	+
Shutoff sclenoid		+ Rated speed rpm : 1500
Volt	: 12	+ Del. quantity
		+ cm3/1000 strokes : −0.6
KSB/AFB Volt	: 12	+ Tolerance
		+ cm3/1000 strokes : 0.1
STARTING FUEL DEL	.IVERY	+ Shutoff solenoid
<b>~</b>	400	+ Volt : 12
Rated speed rpm	: 100	† (AD (ASD ) )   AD
Del. quantity	70.0	+ KSB/AFB Volt : 12
cm3/1000 strokes	: 70.0	<b>†</b>
Tolerance cm3/1000 strokes	: 15.0	INJECTION—PUMP TEST SPECIFICATIONS
Shutoff solenoid	. 13.0	T INJECTION FOR TEST SPECIFICATIONS
Volt	: 12	TIMING DEVICE CHARACTERISTIC
VOCE		THING DEVICE CHARACTERIOTE
KSB/AFB Volt	: 12	Rated speed rpm : 2000
((35,7,1,2)		Aneroid pressure
		hPa : 1000
SETTING GRAD. STA	RTING FUEL DELIVERY	+ Tolerance mm : 0.4
FULL-LOAD STOP CO		+ Check
		tolerance mm : 0.9
Rated speed rpm	: 100	+ Shutoff solenoid
Del. quantity		+ Volt : 12
cm3/1000 strokes	: 32.0	+
	. 52.0	
Tolerance		+ KSB/AFB Volt : 12
cm3/1000 strokes		+
cm3/1000 strokes Shutoff solenoid	: 1.0	Rated speed rpm : 750
cm3/1000 strokes		Rated speed rpm : 750 Aneroid pressure
cm3/1000 strokes Shutoff solenoid Volt	: 1.0 : 12	Rated speed rpm : 750
cm3/1000 strokes Shutoff solenoid	: 1.0	Rated speed rpm : 750 Aneroid pressure hPa : 1000
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt	: 1.0 : 12 : 12	Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 2.3
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt LOAD-DEPENDENT ST	: 1.0 : 12 : 12	Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 2.3 Tolerance mm : 0.4
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt	: 1.0 : 12 : 12	Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 2.3 Tolerance mm : 0.4 Check
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt LOAD-DEPENDENT ST. SETTING	: 1.0 : 12 : 12 ART OF DELIVERY	Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 2.3 Tolerance mm : 0.4 Check tolerance mm : 0.9
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt LOAD-DEPENDENT ST	: 1.0 : 12 : 12 ART OF DELIVERY	Rated speed rpm : 750  Aneroid pressure  hPa : 1000  SV travel mm : 2.3  Tolerance mm : 0.4  Check tolerance mm : 0.9  Shutoff solenoid
cm3/1000 strokes Shutoff solenoid Volt  KSB/AFB Volt  LOAD-DEPENDENT STA SETTING  DELIVERY DIFFERENCE	: 1.0 : 12 : 12 ART OF DELIVERY	Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 2.3 Tolerance mm : 0.4 Check tolerance mm : 0.9
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt LOAD-DEPENDENT ST. SETTING	: 1.0 : 12 : 12 ART OF DELIVERY	Rated speed rpm : 750  Aneroid pressure  hPa : 1000  SV travel mm : 2.3  Tolerance mm : 0.4  Check tolerance mm : 0.9  Shutoff solenoid

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KSB/AFB Volt	:	12	‡	Shutoff solenoid Volt	:	12
Setting point KSB Rated speed rpm		450	+	KSB/AFB Volt	:	12
Aneroid pressure		1000	Ì	Rated speed rpm	:	750
SV travel mm	•	3.0	+	Aneroid pressure	•	1000
Tolerance mm	:	0.1	Ŧ	Overflow quantity ccm/10s	•	111.1
Check tolerance mm	:	1.0	Ŧ	Tolerance	•	
Shutoff solenoid Volt	:	12	‡	ccm/10s	:	22.2
Rated speed rpm	:	1000	+	Check tolerance ccm/10s	:	22.2
Aneroid pressure hPa	:	1000	‡	Shutoff solenoid Volt	:	12
SV travel mm	:	4.6	‡	KSB/AFB Volt	:	12
Tolerance mm Shutoff solenoid	:	1.0	‡	DELIVERY AND BREAK	<away< td=""><td>CHARACTERISTIC</td></away<>	CHARACTERISTIC
Volt	:	12	‡	Rated speed rpm	:	2400
SUPPLY PUMP PRESS	URE		‡	Aneroid pressure hPa	:	1000
Rated speed rpm Aneroid pressure	:	2100	‡	Del. quantity cm3/1000 strokes	:	32.0
hPa Supply pomp	:	1000	‡	Tolerance cm3/1000 strokes	:	2.0
pressure bar Tolerance hPa	:	8.5 0.3	‡	Check tolerance cm3/1000s.	:	5.0
Shutoff solenoid Volt	:	12	‡	Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12	<u></u>	KSB/AFB Volt	:	12
Rated speed rpm	:	750	<del> </del>	Rated speed rpm	:	2500
Aneroid pressure hPa	:	1000	‡	Anercid pressure hPa	:	1000
Supply pomp pressure bar	:	5.5	‡	Del. quantity cm3/1000 strokes	:	20.0
Tolerance hPa Shutoff solenoid	:	0.3	<u> </u>	Check tolerance cm3/1000s.	:	6.0
Volt	:	12	+	Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12	<del>}</del>	KSB/AFB Volt	:	12
OVERFLOW QUANTITY			‡	Rated speed rpm	:	2300
Rated speed rpm Aneroid pressure	:	2100	‡	Aneroid pressure hPa	:	1000
hPa Overflow quantity	:	1000	‡	Del. quantity cm3/1000 strokes	:	44.0
ccm/10s Tolerance	:	138.8	‡	Tolerance cm3/1000 strokes		4.0
ccm/10s	:	41.6	‡	Shutoff solenoid Volt	:	12
Check tolerance	:	41.6	+	KSB/AFB Volt	:	12
	-		+			

Rated speed rpm	:	2620	†	Tolerance		2.5	
Aneroid pressure hPa	:	1000	+	cm3/1000 strokes Check tolerance	•	2.5	
Del. quantity cm3/1000 strokes	•	1.5	‡	cm3/1000s. Shutoff solenoid	:	4.0	
Tolerance			+	Volt	:	12	
cm3/1000 strokes Check tolerance	:	1.5	‡	KSB/AFB Volt	:	12	
cm3/1000s. Shutoff solenoid	:	1.5	<u>†</u>	Rated speed rpm	:	750	
Volt	:	12	+	Aneroid pressure	•	1000	
KSB/AFB Volt	:	12	Ŧ	hPa Del. quantity	:		
Rated speed rpm	:	750	‡	cm3/1000 strokes Tolerance	:	75.0	
Aneroid pressure hPa	•	400	<u> </u>	cm3/1000 strokes Shutoff solenoid	:	4.5	
	·		+	Volt	:	12	
LDA/ HBA stroke mm	:	7.4	Ŧ	KSB/AFB Volt	:	12	
Del. quantity cm3/1000 strokes	:	64.0	† +	Rated speed rpm	:	1750	
Tolerance cm3/1000 strokes		0.5	1	Aneroid pressure hPa	•	1000	
Check tolerance	•		+	Del. quantity	•		
cm3/1000s. Shutoff solenoid	:	4.0	‡	cm3/1000 strokes Tolerance		63.0	
Volt	:	12	‡	cm3/1000 strokes Check tolerance	:	0.5	
KSB/AFB Volt	:	12	+	cm3/1000s. Shutoff solenoid	:	3.5	
Rated speed rpm	:	2100	Ŧ	Volt	:	12	
			Ī				
Aneroid pressure hPa	:	1000	į į				
hPa Del. quantity	:		1	FLECTR SHUTOFF			
hPa Del. quantity cm3/1000 strokes Tolerance		61.0	+	ELECTR. SHUTOFF CONTROL LEVER, ID	LE S	TOP	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:	61.0 2.0	+ + + +	CONTROL LEVER, ID Rated speed rpm	LE S	TOP 450	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		61.0	+ + + + +	CONTROL LEVER, ID Rated speed rpm Del. quantity	:	450	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance		61.0 2.0	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	450 1.5	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	:	61.0 2.0 4.0	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: :	450 1.5 1.5	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt KSB/AFB Volt	:	61.0 2.0 4.0 12	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	450 1.5 1.5 1.5	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	61.0 2.0 4.0 12 12 550	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : :	450 1.5 1.5	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt KSB/AFB Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	61.0 2.0 4.0 12 12 550 47.5	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	: : :	450 1.5 1.5 1.5 5.0	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	61.0 2.0 4.0 12 12 550 47.5 3.0	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO	: : :	450 1.5 1.5 1.5 5.0	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	61.0 2.0 4.0 12 12 550 47.5	+++++++++++++++++	CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO.	: : : : : NTRO	450 1.5 1.5 1.5 5.0 L LEVER	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	61.0 2.0 4.0 12 12 550 47.5 3.0	+++++++++++++++	CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP COR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : NTRO	450 1.5 1.5 1.5 5.0 L LEVER 450 1.5	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	61.0 2.0 4.0 12 12 550 47.5 3.0	† † †	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CORated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : : : NTRO	450 1.5 1.5 1.5 5.0 L LEVER 450 1.5	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Aneroid pressure hPa	: : : : : : : : : : : : : : : : : : : :	61.0 2.0 4.0 12 12 550 47.5 3.0 12	† † † † †	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes FULL-LOAD STOP CORRATED STOP CORRATED STOP CORRATED STORES Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : : : NTRO	450 1.5 1.5 1.5 5.0 L LEVER 450 1.5	
hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Aneroid pressure		61.0 2.0 4.0 12 12 550 47.5 3.0 12 12	† † † † †	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CORated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : : : NTRO	450 1.5 1.5 1.5 5.0 L LEVER 450 1.5	

Rated speed rpm			1		
Del. quantity	: 500	•	- Rated speed rpm		1500
cm3/1000 strokes	. 1	.5	- Del. quantity	•	1700
Tolerance	• •		- cm3/1000 strokes	:	5.0
cm3/1000 strokes	: 1	.5	- Tolerance		
Check tolerance		+	cm3/1000 strokes	:	1.0
cm3/1000s.	: 1	.5	- Check tolerance		
Shutoff solenoid		12	- cm3/1000S. - Shutoff solenoid	:	1.0
Volt	•	12	- Shutorr sotenora - Volt		12
KSB/AFB Volt	:	12		•	12
		-	- KSB/AFB Volt	:	12
Rated speed rpm	: 470	+	-		
Del. quantity	-		<ul> <li>TIMING—DEVICE TRA</li> </ul>	AVEL	DIFFERENCE
cm3/1000 strokes	: 3	.0	- Dotad aroad mar		1500
Tolerance cm3/1000 strokes	. 7	.0	<ul> <li>Rated speed rpm</li> <li>Tolerance mm</li> </ul>	:	1500 0.4
Check tolerance	. ,	••	- Check	•	0.4
cm3/1000s.	: 4	.0	- tolerance mm	:	0.4
Shutoff solenoid		+	- Shutoff solenoid		
Volt	;	12	- Volt	:	12
MODIAED WELL		12	- KCD/AFD Val+		10
KSB/AFB Volt	:	12	- KSB/AFB Volt	:	12
		1			
		4	- EXHAUST-GAS RECIF	RCUL	ATION
		+	-		
			- Rated speed rpm	:	1000
CHECKING LOAD-DEP		†	- Del. quantity - cm3/1000 strokes		17.9
START OF DELIVERY		1	- Tolerance	•	17.9
DELIVERY DIFFEREN	CF	1	- cm3/1000 strokes	:	1.0
		+	- Check tolerance		
Rated speed rpm	: 1500	+	- cm3/1000s.	:	2.5
Del. quantity	_	†	- Shutoff solenoid		40
		.U <del>-</del>			
cm3/1000 strokes	: -9	1	- Volt	:	12
Tolerance		+	•	:	_
Tolerance cm3/1000 strokes		.0	- VOLT - - KSB/AFB Volt -	:	12
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 3 : 4	+	•	:	_
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: 3 : 4	.0	KSB/AFB Volt START TRANSITION		12
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 3 : 4	.0	- KSB/AFB Volt - START TRANSITION - Rated speed rpm		12
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt	: 3 : 4.	.0	KSB/AFB Volt START TRANSITION Rated speed rpm Del. quantity	:	12 450
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: 3 : 4.	.0	KSB/AFB Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes	:	12 450
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt	: 3 : 4 :	.0 .0 .12	KSB/AFB Volt START TRANSITION Rated speed rpm Del. quantity	:	12 450
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt KSB/AFB Volt	: 3 : 4 : 7	.0 .0 .12	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	:	12 450 60.0 15.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt KSB/AFB Volt TIMING-DEVICE TRA	: 3 : 4 : 7	.0 .0 .12	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	12 450 60.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  TIMING-DEVICE TRAY Rated speed rpm Del. quantity	: 3 : 4. : . : . VEL DIFFEF : 1500	.0 .0 12 12 RENCE	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	:	12 450 60.0 15.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  TIMING-DEVICE TRAY Rated speed rpm Del. quantity cm3/1000 strokes	: 3 : 4. : . : . VEL DIFFEF : 1500	.0 .0 12 12 RENCE	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	:	12 450 60.0 15.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  TIMING-DEVICE TRA  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 3 : 4 : : : : : VEL DIFFER : 1500 : -0.	.0 .0 12 12 RENCE	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	:	12 450 60.0 15.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  TIMING-DEVICE TRAY Rated speed rpm Del. quantity cm3/1000 strokes	: 3 : 4 : : : : : VEL DIFFER : 1500 : -0.	.0 .0 12 12 RENCE	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	: : : :	12 450 60.0 15.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  TIMING-DEVICE TRATERATED STROKES TOLERANCE cm3/1000 strokes Check tolerance cm3/1000s.	: 3 : 4 :	.0 .0 12 12 RENCE	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	12 450 60.0 15.0 12 12
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  TIMING-DEVICE TRA  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: 3 : 4 :	.0 .0 12 12 RENCE	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	12 450 60.0 15.0 12 12
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  TIMING-DEVICE TRATERATED STROKES TOLERANCE cm3/1000 strokes Check tolerance cm3/1000s.	: 3 : 4 :	.0 .0 12 12 RENCE	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	12 450 60.0 15.0 12 12 12 250 85.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  TIMING-DEVICE TRAY  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: 3 : 4 : : VEL DIFFEF : 1500 : -0. : 0. : 1	.0 .0 12 12 RENCE	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	12 450 60.0 15.0 12 12
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  TIMING-DEVICE TRA  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: 3 : 4 : : VEL DIFFEF : 1500 : -0. : 0. : 1	.0 .0 12 12 RENCE	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	12 450 60.0 15.0 12 12 12 250 85.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt  KSB/AFB Volt  TIMING-DEVICE TRAY  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: 3 : 4. : 7 : 7 : 1500 : -0. : 0. : 1	.0 .0 12 12 RENCE	KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt  KSB/AFB Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	12 450 60.0 15.0 12 12 12 250 85.0 15.0

NO8

KSB/AFB Volt :

12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 7.4

Dimension K mm : K1
Dimension KF mm : K0T
MS1 dimension mm : 1,2

Tolerance mm : +0,15/-0,1

MICROSWITCH

SET

mm : ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 43,0..45,0

Control lever

position YB mm : 54,8..65,2

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 21.06.95 Edition : ISO 4113 Test oil

: 0 460 414 121 Part no. Pump designation: VE4/11F1900R494-1

Customer-spec. information

: IVECO-SOFIM Customer : 8140.47.2585 Motor

TEST BENCH REQUIREMENTS

Overflow

0.75 restriction mm

Inlet press. bar : 0.35Tolerance bar 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

250 bar Tolerance bar

: 1 680 750 073 Test lines

Outside diameter : 6.00

2.00 x inside diameter: 450 x length mm :

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1200 Rated speed rpm

Aneroid pressure

hPa 1000

1.8 Setting mm Tolerance mm 0.1 Shutoff solenoid 12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1200 Aneroid pressure 1000

Setting hPa 6.0 Tolerance hPa 0.3

Shutoff solenoid

12 Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

1400 Rated speed rpm : Aneroid pressure 1000 hPa Del. quantity cm3/1000 strokes : 56.0 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 4.5 Shutoff solenoid

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

550 Rated speed rpm

Del. quantity

cm3/1000 strokes : 27.0

Tolerance

Volt

cm3/1000 strokes : 0.5

Shutoff solenoid

12 Volt Check tolerance

IDLE SETTING

cm3/1000s.

325 Rated speed rpm :

Del. quantity cm3/1000 strokes : Tolerance

17.0

4.5

12

cm3/1000 strokes : 2.0 Shutoff solenoid 12

Volt Spread

cm3/1000 strokes : 6.0

Check tolerance cm3/1000s.

6.5

FULL LOAD SDEED DECULATION	1
FULL-LOAD SPEED REGULATION	İ
Rated speed rpm : 2100	INJECTION-PUMP TEST SPECIFICATIONS
Pressure hPa : 1000	TIMING DEVICE CHARACTERICTIC
Del. quantity cm3/1000 strokes : 37.0	TIMING DEVICE CHARACTERISTIC
Tolerance cm3/1000 strokes : 3.0	Rated speed rpm : 1600 Aneroid pressure
Shutoff solenoid Volt : 12	† hPa : 1000
Volt : 12	SV travel mm : 4.3
STARTING FUEL DELIVERY	Tolerance mm : 0.4
Rated speed rpm : 100 Del. quantity	tolerance mm : 0.7 Shutoff solenoid
cm3/1000 strokes : 65.0	+ Volt : 12
Tolerance cm3/1000 strokes : 25.0	Rated speed rpm : 1100
Shutoff solenoid Volt : 12	+ Aneroid pressure + hPa : 1000
	+
	+ SV travel mm : 1.0 + Tolerance mm : 0.4
LOAD-DEPENDENT START OF DELIVERY	- Check
SETTING	tolerance mm : 0.7
DEL TUEDY DIEGEDENCE	+ Shutoff solenoid + Volt : 12
DELIVERY DIFFERENCE	+ Volt : 12
Rated speed rpm : 1400 Pressure hPa : 1000	Rated speed rpm : 1900 Aneroid pressure
Del. quantity	hPa : 1000
cm3/1000 strokes : -26.0 Tolerance	+ SV travel mm : 4.9
cm3/1000 strokes : 1.0	Tolerance mm : 0.4
Shutoff solenoid	+ Check
Volt : 12	tolerance mm : 0.7 Shutoff solenoid
PRESSURE DIFFERENCE	Volt : 12
Rated speed rpm : 1400	SUPPLY PUMP PRESSURE CHARACTERISTIC
Aneroid pressure hPa : 1000	Rated speed rpm : 1900
Del. quantity	+ Aneroid pressure
cm3/1000 strokes : -0.2	+ hPa : 1000
Tolerance cm3/1000 strokes : 0.1	Supply pomp : 8.5
Shutoff solenoid	+ Tolerance hPa : 0.3
Volt : 12	+ Shutoff solenoid + Volt : 12
TIMING-DEVICE TRAVEL DIFFERENCE	+
Data diamandi non in 1/00	Rated speed rpm : 700
Rated speed rpm : 1400 Aneroid pressure	+ Aneroid pressure + hPa : 1000
hPa : 1000	+ Supply pomp
Del. quantity	pressure bar : 4.1 Tolerance hPa : 0.3
cm3/1000 strokes : -0.8 Tolerance	Tolerance hPa : 0.3  Shutoff solenoid
cm3/1000 strokes : 0.1 Shutoff solenoid	+ Volt : 12
Volt : 12	T OVERFLOW QUANTITY

Rated speed rpm	:	1900		‡	Shutoff solenoid Volt	:	12
Aneroid pressure hPa Overflow quantity	:	1000		+	Rated speed rpm Aneroid pressure	:	700
ccm/10s	:	138.8		Ţ	hPa	:	400
Tolerance ccm/10s	:	41.6		Ŧ	Del. quantity cm3/1000 strokes	:	44.0
Check tolerance		,,,		+	Tolerance cm3/1000 strokes	:	0.5
ccm/10s Shutoff solenoid	:	41.6		‡	Check tolerance cm3/1000s.	:	4.0
Volt	:	12		‡	Shutoff solenoid Volt	:	12
Rated speed rpm Aneroid pressure	3	700		‡	Rated speed rpm	:	1900
hPa Overflow quantity	:	1000		‡	Aneroid pressure hPa	:	1000
ccm/10s Tolerance	:	111.1		‡		:	58.5
ccm/10s	;	22.2		‡	Tolerance cm3/1000 strokes	:	2.5
Check tolerance ccm/10s	:	22.2		‡	Check tolerance cm3/1000s.	:	3.5
Shutoff solenoid Volt	:	12		‡	Shutoff solenoid Volt	:	12
DELIVERY AND BREA	KAWA	Y CHARAC	TERISTIC	+	Rated speed rpm	:	1200
Rated speed rpm	:	2100		+	Aneroid pressure hPa	:	1000
Aneroid pressure	:	1000		†	Del. quantity cm3/1000 strokes	:	56.0
Del. quantity cm3/1000 strokes	:	37.0		+	Tolerance cm3/1000 strokes	:	2.5
Tolerance	:	3.0		†	Check tolerance cm3/1000s.	•	4.0
Check tolerance cm3/1000s.		4.5		1	Shutoff solenoid Volt	•	12
Shutoff solenoid Volt	•	12		Ì	Rated speed rpm	:	1750
Rated speed rpm	:	2200		Ì	Aneroid pressure		1000
Aneroid pressure	•	1000		$\frac{1}{1}$	Del. quantity cm3/1000 strokes	:	58.0
Del. quantity cm3/1000 strokes	•	18.0		Ī	Tolerance cm3/1000 strokes	:	2.5
Check tolerance cm3/1000s.	•	6.0		Ŧ	Check tolerance cm3/1000s.	•	3.5
Shutoff solenoid	•	12		Ŧ	Shutoff solenoid	•	12
Volt	•			7		•	700
Rated speed rpm Aneroid pressure	:	2280		Ŧ	Rated speed rpm Aneroid pressure	•	
hPa Del. quantity		1000		Ŧ	hPa Del. quantity	•	1000
Tolerance	:	1.5		+	cm3/1000 strokes Tolerance	:	59.0
cm3/1000 strokes Check tolerance	:	1.5		Ŧ	cm3/1000 strokes Check tolerance	:	4.5
cm3/1000s.	:	1.5		+	cm3/1000s.	:	5.5

Chuhaff palamata		l Anomaid and		
Shutoff solenoid Volt	: 12	+ Aneroid pre + hPa	ssure .	1000
VOCE	. 12	T 117a Del. quanti	+\/	1000
Rated speed rpm	• 1/00	+ cm3/1000 st		-28.0
Aneroid pressure	. 1400	Tolerance	TORES .	20.0
hPa	: 1000	cm3/1000 st	rokes :	3.0
Del. quantity	. 1000	+ Check toler		5.0
cm3/1000 strokes	: 56.0	- cm3/1000s.		4.0
Tolerance	. )0.0	Shutoff sol		4.0
cm3/1000 strokes	: 0.5	T Volt		12
Check tolerance	. 0.5	I vocc	•	12
cm3/1000s.	: 3.5	TIMING_NEVI	CE TRAVEL	DIFFERENCE
Shutoff solenoid		I LINING-DEAT	CE INAVEL	DITTERENCE
Volt	: 12	Rated speed	: ממי	1400
VOCE	. , , ,	+ Aneroid pre		1-400
		hPa	•	1000
		————— Pel. quanti	+~	1000
ELECTR. SHUTOFF		cm3/1000 st	rokes ·	-0.8
CONTROL LEVER, ID	I F STOP	Tolerance	iokes .	0.0
CONTROL LEVERY 10	LL 3101	- cm3/1000 st	rokes :	0.1
Rated speed rpm	: 325	Check toler		0.1
Del. quantity	. 565	cm3/1000s.		0.1
cm3/1000 strokes	: 1.5	- Shutoff sol		0.1
Tolerance	• 1.5	Volt	·	12
cm3/1000 strokes	: 1.5	1	•	12
Check tolerance		DELIVERY DI	FEERENCE	
cm3/1000s.	: 1.5	1 DEPITE	i citation	
CIII 7 10000 .		+ Rated speed	rom :	1400
FULL-LOAD STOP CO	NTROL LEVER	+ Aneroid pre		00
. 022 20/10 010. 00	THE CENTER	+ hPa	:	1000
Rated speed rpm	: 325	+ Del. quanti	tv	.000
Del. quantity	. 025	+ cm3/1000 st		1.5
cm3/1000 strokes	: 1.5	+ Tolerance		
Tolerance		- cm3/1000 st	rokes :	1.5
cm3/1000 strokes	: 1.5	+ Check toler	ance	
Check tolerance		$\perp$ cm3/1000s.	:	1.5
cm3/1000S.	: 1.5	+ Shutoff sole	enoid	
		+ Volt	:	12
IDLE DELIVERY		<del>}</del>		
		+ TIMING-DEVI	CE TRAVEL	DIFFERENCE
Rated speed rpm	: 450	+		
Del. quantity	• -	+ Rated speed		1400
cm3/1000 strokes	: 1.5	+ Aneroid pres	ssure	4000
Tolerance		+ hPa	:	1000
cm3/1000 strokes	: 1.5	+ Tolerance m	n :	0.2
Check tolerance	4.5	+ Check		o ,
cm3/1000S.	: 1.5	+ tolerance m		0.4
Shutoff solenoid	45	+ Shutoff sole	eno1d	45
Volt	: 12	+ Volt	:	12
		†		
		CTART TRANS		
		+ START TRANS	LITON	
		Dated around	nnm ·	500
CUECUTNO LOAD DED	ENDENT	Rated speed Del. quanti		UU
CHECKING LOAD-DEP		+ cm3/1000 str		22.0
START OF DELIVERY		+ Tolerance	OVE2 .	42.0
DELIVERY DIFFEREN	rE	- cm3/1000 sti	nokes ·	8.0
DEFINER DILLEKEM	CL	Shutoff sole		0.0
Rated speed rpm	: 1400	- Volt		12
Maren speen (bill	. 1400	1. 1000	•	• •

Rated speed rpm : 200

Del. quantity cm3/1000 strokes : 80.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 8,4
Tolerance mm : +-0,2
MS1 dimension mm : 1,7

Tolerance mm : +0,15/-0,1

KSB travel mm : 7,0

# CONTROL LEVER POSITION SET

---

Control Lever

position YA mm : 37,9..39,9

Control lever

position YB mm : 43,7..48,9

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.11.93 Test oil : ISO 4113

Part no. : 0 460 426 209 Pump designation : VE6/12F1200R496

Customer—spec. information Customer : MAN

Motor : D 0826 LF 07 Power KW : 140.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

bar : 250 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 849

REMARKS

BEGINNING OF DELIVERY

Prestroke

Check tolerance mm : +-0,04

: 0,2

: +-0,02

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850

Aneroid pressure

(as of UT) mm

Tolerance mm

hPa : 1000

Setting mm : 2.2 Tolerance mm : 0.2

SUPPLY PUMP PRESSURE

Rated speed rpm : 850

Aneroid pressure

hPa : 1000

Setting hPa : 7.6 Tolerance hPa : 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 92.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 4.5

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 0.5

Check tolerance

cm3/1000s. : 4.5

IDLE SETTING

Rated speed rpm : 250

Del. quantity

cm3/1000 strokes : 20.0

Tolerance

cm3/1000 strokes : 3.5

Spread

cm3/1000 strokes : 6.0

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Check tolerance cm3/1000s.	: 6.	.5	†	Supply pomp pressure bar	:	5.8	
			1	Tolerance hPa	:	0.3	
FULL-LOAD SPEED	REGULATION		<u> </u>	OVERFLOW QUANTITY			
Rated speed rpm Pressure hPa		10	1	Rated speed rpm Overflow quantity	:	500	
Del. quantity cm3/1000 strokes			7	ccm/10s	:	63.8	
Tolerance cm3/1000 strokes			Ŧ	Tolerance ccm/10s	:	22.2	
cm3/1000 strokes	: 3.	U	‡	Check tolerance			
STARTING FUEL DEL	_IVERY		1	ccm/10s	:	22.2	
Rated speed rpm Del. quantity	: 100		1	Rated speed rpm Aneroid pressure	:	1200	
cm3/1000 strokes Tolerance	: 80.	0	1	hPa Overflow quantity	:	1000	
cm3/1000 strokes	: 20.	0	7	ccm/10s Tolerance	:	97.2	
			Ŧ	ccm/10s	:	41.6	
			†	Check tolerance ccm/10s	:	41.6	
INJECTION-PUMP TE	EST SPECIFI	CATIONS	1	DELIVERY AND BREAK	< A L.I A	V CHADACTEDIS	TTC
TIMING DEVICE CHA	ARACTERISTI	C	Ī	Rated speed rpm	: :		110
Rated speed rpm	: 950		Ŧ	Aneroid pressure	•		
Aneroid pressure hPa	: 100	0	Ŧ	hPa Del. quantity	•	1000	
SV travel mm	: 3.	3	1	cm3/1000 strokes Tolerance	:	65.0	
Tolerance mm Check	: 0.		Ì	cm3/1000 strokes Check tolerance	:	3.0	
tolerance mm	: 0.	7	ł	cm3/1000s.	:	4.5	
Rated speed rpm	: 750		Ŧ	Rated speed rpm	:	1350	
Aneroid pressure hPa	: 100	0	Ŧ	Aneroid pressure hPa	:	1000	
SV travel mm	: 1.		Ŧ	Del. quantity cm3/1000 strokes	:	7.5	
Tolerance mm Check	: 0.		‡	Check tolerance cm3/1000s.	:	7.5	
tolerance mm	: 0.		‡	Rated speed rpm	:	1450	
SUPPLY PUMP PRESS	URE CHARAC	TERISTIC	‡	Aneroid pressure hPa	:	1000	
Rated speed rpm Aneroid pressure	: 1200		‡	Del. quantity cm3/1000 strokes	:	1.5	
hPa Supply pomp	: 100	0	‡	Tolerance cm3/1000 strokes		1.5	
pressure bar Tolerance hPa	: 9. : 0.		1	Check tolerance cm3/1000s.	:	1.5	
Rated speed rpm	: 500	-	1	Rated speed rpm	:	1300	
Aneroid pressure		_	<del>-</del>	Aneroid pressure	•		
hPa	: 100	O	‡	hPa	:	1000	

Del. quantity cm3/1000 strokes		48.0	‡ 6	Del. quantity cm3/1000 strokes		92.0	
Tolerance cm3/1000 strokes		18.0	<u> </u>	Tolerance cm3/1000 strokes		0.5	
Check tolerance	•	10.0		Check tolerance	•	0.5	
cm3/1000s.	:	18.0		m3/1000s.	:	2.5	
Rated speed rpm	:	5 <b>00</b>	+ -				
Aneroid pressure hPa	:	450	<b>+</b> M	MECHANICAL SHUTOF	F		
Del. quantity cm3/1000 strokes	;	93.0	<del> </del> A	Rated speed rpm Uneroid pressure	:	1200	
Tolerance cm3/1000 strokes	:	0.5	+ 0	Pa Pel. quantity	:	1000	
Check tolerance cm3/1000s.	•	2.5		:m3/1000 strokes Tolerance	:	1.5	
	•	1200	<del> </del> c	m3/1000 strokes	:	1.5	
Rated speed rpm Aneroid pressure	:		<u></u>	m3/1000 strokes	:	5.0	
hPa Del. quantity	:	1000		heck tolerance m3/1000s.	:	1.5	
cm3/1000 strokes Tolerance	:	89.4	<del> </del> s	pread	:	5.0	
cm3/1000 strokes	:	2.5	Ŧ	IID/ 1000 Strokes	•	٥.0	
Check tolerance cm3/1000s.	:	4.0	Ŧ,	01 5 051 7/504			
Rated speed rpm	:	600	+	DLE DELIVERY			
Aneroid pressure hPa	:	1000		ated speed rpm el. quantity	:	400	
Del. quantity cm3/1000 strokes	•	101.0	•	m3/1000 strokes olerance	:	1.5	
Tolerance cm3/1000 strokes		2.5	+ c	m3/1000 strokes heck tolerance	:	1.5	
Check tolerance				m3/1000s.	:	1.5	
cm3/1000s.	:	4.0	‡				
Rated speed rpm Aneroid pressure	:	800	‡				
hPa Del. quantity	:	1000	‡				
cm3/1000 strokes Tolerance	:	94.6	‡ s	TART TRANSITION			
cm3/1000 strokes Check tolerance	:	2.5		ated speed rpm el. quantity	:	430	
cm3/1000s.	:	4.0	+ c	m3/1000 strokes olerance	:	55.0	
Rated speed rpm Aneroid pressure	:	500		m3/1000 strokes	:	15.0	
hPa	:	1000	Ţ			770	
Del. quantity cm3/1000 strokes	:	106.6	+ D	ated speed rpm el. quantity			
Tolerance cm3/1000 strokes	:	4.5	<del> </del> To	m3/1000 strokes olerance		85.0	
Check tolerance cm3/1600s.	:	6.0	+ cı	m3/1000 strokes	:	15.0	
Rated speed rpm	:	1000	+ A	SSEMBLY AND ADJUS	TMEN	T DIMENS	LONS
Aneroid pressure hPa	:	1000	‡ p.	imension KF mm	: 6,	0	

Tolerance mm : +0,2 Dimension MS mm : 1,1 Tolerance mm : +0,2

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.06.95 Test oil : ISO 4113

Part no. : 0 460 426 244 Pump designation : VE6/12F1250R498-3

Customer-spec. information Customer : CDC

Motor : 6 BT 5.9B

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 109

Opening pressure

bar : 207 Tolerance bar : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

# REMARKS

## BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,2 Tolerance mm : +-0,02

Outlet : D

## INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 900
Aneroid pressure
hPa : 1000

Setting mm : 1.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 24

# SUPPLY PUMP PRESSURE

Rated speed rpm : 900
Aneroid pressure
hPa : 1000

Setting hPa : 6.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

850 Rated speed rpm Aneroid pressure 1000 hPa Del. quantity cm3/1000 strokes : 85.0 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 5.0 Shutoff solenoid Volt 24

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

5.0

500 Rated speed rpm : Del. quantity 61.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : 0.5 Spread 5.0 cm3/1000 strokes : Shutoff solenoid 24 Volt Check tolerance cm3/1000s. 6.0 Check tolerance

cm3/1000s.

		+ Shutoff solenoid	
IDLE SETTING		Volt	: 24
Rated speed rpm Del. quantity	: 350	Rated speed rpm	: 450
cm3/1000 strokes	: 13.0	SV travel mm	: 2.5
Tolerance		+ Tolerance mm	: 0.5
cm3/1000 strokes	: 2.0	+ Check	
Shutoff solenoid	2,	+ tolerance mm	: 0.7
Volt	: 24	+ Shutoff solenoid	: 24
Spread cm3/1000 strokes	: 5.5	† Volt	: 24
Check tolerance		+ KSB/AFB Volt	: 24
cm3/1000s.	: 7.0	Patril annual annual	. 000
		+ Rated speed rpm + Aneroid pressure	: 800
FULL-LOAD SPEED R	EGULATION	+ hPa	: 1000
1000 20/10 0/ 200 11	2002/11/2010	+ ""	
Rated speed rpm	: 1350	+ SV travel mm	: 1.3
Pressure hPa	: 1000	† Tolerance mm	: 0.4
Del. quantity	<b>-</b>	+ Check	
cm3/1000 strokes	: 54.0	+ tolerance mm	: 0.7
Tolerance cm3/1000 strokes	: 3.0	+ Shutoff solenoid	: 24
Shutoff solenoid	: 3.0	† Volt	: 24
Volt	: 24	SUPPLY PUMP PRESS	SURE CHARACTERISTIC
OTABETANO FUEL AFI	THEON	† Rotad analy and	. 1250
STARTING FUEL DEL	IVERT	+ Rated speed rpm + Aneroid pressure	: 1250
Rated speed rpm	: 100	+ hPa	: 1000
Del. quantity	. 100	Supply pomp	. 1000
cm3/1000 strokes	: 80.0	+ pressure bar	: 7.5
Tolerance	. 33.3	+ Tolerance hPa	: 0.3
cm3/1000 strokes	: 20.0	+ Shutoff solenoid	
Shutoff solenoid		+ Volt	: 24
Volt	: 24	<b>†</b>	
		+ Rated speed rpm	: 800
		+ Aneroid pressure	. 1000
		+ hPa	: 1000
		+ Supply pomp + pressure bar	: 5.7
INJECTION-PUMP TE	ST SPECIFICATIONS	+ Tolerance hPa	: 0.3
2.102012011 1 0111 1 0		+ Shutoff solenoid	
TIMING DEVICE CHA	RACTERISTIC	+ Volt	: 24
		+	
Rated speed rpm	: 1250	+ Rated speed rpm	: 500
Aneroid pressure	4000	+ Aneroid pressure	4000
hPa	: 1000	+ hPa	: 1000
SV travel mm	: 2.6	Supply pomp pressure bar	: 4.2
Tolerance mm	: 0.4	Tolerance hPa	: 0.3
Check	. 0.4	Shutoff solenoid	. 0.3
tolerance mm	: 0.7	+ Volt	: 24
Shutoff solenoid		+	
Volt	: 24	OVERFLOW QUANTITY	
Dated speed spe	: 500	Rated speed rpm	: 500
Rated speed rpm Aneroid pressure	. , , , , , , , , , , , , , , , , , , ,	+ Overflow quantity	
hPa	: 1000	ccm/10s	: 63.8
<del></del>	3 <b>-2</b>	+	

Tolerance ccm/10s	: 22.2	<del>†</del>	Del. quantity cm3/1000 strokes	:	72.0	
Check tolerance	: 22.2	‡	Tolerance cm3/1000 strokes Check tolerance	:	0.5	
Shutoff solenoid Volt	: 24	Ī	cm3/1000s. Shutoff solenoid	:	4.0	
Rated speed rpm	: 1250		Volt	:	24	
Aneroid pressure	: 1000	<u> </u>	Rated speed rpm Aneroid pressure	:	1250	
Overflow quantity ccm/10s	: 97.2	‡	hPa Del. quantity	:	1000	
Tolerance ccm/10s	: 41.6	‡	cm3/1000 strokes Tolerance		82.0	
Check tolerance	: 41.6	†	cm3/1000 strokes Check tolerance cm3/1000s.	:	2.0 3.0	
Shutoff solenoid Volt	: 24	Ī	Shutoff solenoid	•	24	
	KAWAY CHARACTERISTIC	Ì	Rated speed rpm	:	1100	
Rated speed rpm	: 1350	$\frac{1}{1}$	Aneroid pressure	•	1000	
Aneroid pressure	: 1000	Ī	Del. quantity cm3/1000 strokes	•	85.0	
Del. quantity cm3/1000 strokes		+	Tolerance cm3/1000 strokes		1.5	
Tolerance cm3/1000 strokes	: 3.0	+	Check tolerance cm3/1000s.	:	3.5	
Check tolerance cm3/1000s.	: 8.0	+	Shutoff solenoid Volt	:	24	
Shutoff solenoid Volt	: 24	‡	Rated speed rpm Aneroid pressure	:	850	
Rated speed rpm Aneroid pressure	: 1425	Ī	nPa Del. quantity	:	1000	
hPa Del. quantity	: 1000	1	cm3/1000 strokes Tolerance	:	85.0	
cm3/1000 strokes Check tolerance	: 25.0	+		:	0.5	
cm3/1000S. Shutoff solenoid	: 15.0	+	cm3/1000s. Shutoff solenoid	:	3.0	
Volt	: 24	+	Volt	:	24	
Rated speed rpm Aneroid pressure hPa	: 1480 : 1000	†	MECHANICAL SHUTOF	F		
Del. quantity cm3/1000 strokes	: 1.5	Ī	Rated speed rpm Aneroid pressure	:	1250	
Tolerance	: 1.5	+	hPa Del. quantity	:	1000	
Check tolerance cm3/1000s.	: 1.5	+	cm3/1000 strokes Tolerance	:	1.5	
Shutoff solenoid Volt	: 24	‡	cm3/1000 strokes Check tolerance	:	1.5	
Rated speed rpm	: 650	‡	cm3/1000s. Shutoff solenoid	:	1.5	
Aneroid pressure hPa	: 450	‡	Volt	:	24	

ELECTR. SHUTOFF

CONTROL LEVER, IDLE STOP

Rated speed rpm 350

Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm3/1000 strokes : 1.5

Check tolerance

cm3/1000s. 1.5

FULL-LOAD STOP CONTROL LEVER

350 Rated speed rpm

Del. quantity

1.5 cm3/1000 strokes :

IDLE DELIVERY

410 Rated speed rpm

Del. quantity

1.5 cm3/1000 strokes :

Tolerance

1.5 cm3/1000 strokes :

Check tolerance

cm3/1000s. 1.5

Shutoff solenoid

24 Volt

START TRANSITION

210 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 75.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid

24 Volt

130 Rated speed rpm

Del. quantity 95.0

cm3/1000 strokes :

Tolerance 20.0

cm3/1000 strokes :

Shutoff solenoid

24 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7

: +-0,1 Tolerance mm

Dimension KF mm : 6,4 Tolerance mm : +-0,2 MS1 dimension mm : 1,36

Tolerance mm : +0,15/-0,1

CONTROL LEVER POSITION

SET

Control lever

: 34,8..38,8 position YA mm

Control Lever

: 43,6..48,8 position YB mm

End of test-specification sheet

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Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.02.96 Test oil : ISO 4113

Part no. : 0 460 426 245 Pump designation : VE6/12F1250R498-4

Customer-spec. information Customer : CDC

Motor : 6 BT 5.9B

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 109

Opening pressure

bar : 207 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,4
Tolerance mm : +-0,02

Outlet : D

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 900

Aneroid pressure

hPa : 1000

Setting mm : 1.4 Tolerance mm : 0.2

Shutoff solenoid

Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 900

Aneroid pressure

hPa : 1000

Setting hPa : 6.2 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 850

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 83.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 5.0

Check tolerance cm3/1000s. :

Shutoff solenoid Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

5.0

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 69.5

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 5.0

Shutoff solenoid Volt

: 24

Check tolerance cm3/1000s.

: 6.0

Check tolerance

cm3/1000s. : 5.0

		↓ Shutoff soleno	oid	
IDLE SETTING		Volt	:	24
Rated speed rpm Del. quantity	: 330	Rated speed r	om:	450
cm3/1000 strokes Tolerance	: 9.0	SV travel mm Tolerance mm	:	2.5 0.5
cm3/1000 strokes Shutoff solenoid		+ Check + tolerance mm	:	0.7
Volt Spread	: 24	+ Shutoff solenc + Volt	oid :	24
cm3/1000 strokes Check tolerance		+ KSB/AFB Volt	:	24
cm3/1000s.	: 7.0	Rated speed r		800
FULL-LOAD SPEED R	EGULATION	+ Aneroid pressu + hPa	ire :	1000
Rated speed rpm Pressure hPa	: 1380 : 1000	SV travel mm Tolerance mm	:	1.0 0.4
Del. quantity cm3/1000 strokes Tolerance	: 63.0	+ Check + tolerance mm + Shutoff solence	:	0.7
cm3/1000 strokes Shutoff solenoid	: 3.0	Volt	:	24
Volt	: 24	SUPPLY PUMP PR	ESSURE	CHARACTERISTIC
STARTING FUEL DEL	IVERY	Rated speed rp Aneroid pressu		1250
Rated speed rpm Del. quantity	: 100	hPa + Supply pomp	:	1000
cm3/1000 strokes Tolerance	: 130.0	pressure bar Tolerance hPa	:	7.5 0.3
cm3/1000 strokes Shutoff solenoid		+ Shutoff soleno + Volt	iid :	24
Volt	: 24	+ Rated speed rp		800
		+ Aneroid pressu + hPa	re :	1000
		Supply pomp pressure bar	:	5.7
INJECTION-PUMP TE	ST SPECIFICA		:	0.3
TIMING DEVICE CHAP	RACTERISTIC	Volt	:	24
Rated speed rpm Aneroid pressure	: 1250	Rated speed rp Aneroid pressu		500
hPa	: 1000	+ hPa + Supply pomp	:	1000
SV travel mm	: 2.8	+ pressure bar		4.2
Tolerance mm Check	: 0.4	+ Tolerance hPa + Shutoff soleno		0.3
tolerance mm Shutoff solenoid	: 0.7	+ Volt	:	24
Volt	: 24	+ OVERFLOW QUANT	ITY	
Rated speed rpm Aneroid pressure	: 500	Rated speed rp Overflow quant	m : ity	
hPa	: 1000	+ ccm/10s	:	72.2

Tolerance ccm/10s	:	22.2	‡	Aneroid pressure hPa	:	450
Check tolerance ccm/10s Shutoff solenoid	:	22.2	<del> </del>	LDA/ HBA stroke mm Del. quantity	:	7.0
Volt	:	24	+	cm3/1000 strokes	:	84.0
Rated speed rpm Aneroid pressure	:	1250	Ī	Tolerance cm3/1000 strokes Check tolerance	:	0.5
hPa Overflow quantity	:	1000	+	cm3/1000S. Shutoff solenoid	:	4.0
ccm/10s	:	88.8	Ŧ	Volt	:	24
Tolerance ccm/10s	:	27.7	Ī	Rated speed rpm Aneroid pressure	:	1250
Check tolerance ccm/10s	:	27.7	+	hPa Del. quantity	:	1000
Shutoff solenoid Volt	:	24	‡	cm3/1000 strokes Tolerance	:	86.0
DELIVERY AND BREA	KAWA	Y CHARACTERISTIC	+	cm3/1000 strokes Check tolerance	:	2.5
Rated speed rpm	:	1380	<u>†</u>	cm3/1000s. Shutoff solenoid	:	3.0
Aneroid pressure	•		Ŧ	Volt	:	24
hPa Del. quantity	:	1000	‡	Rated speed rpm	:	900
cm3/1000 strokes Tolerance	:	63.0	‡	Aneroid pressure hPa	:	1000
cm3/1000 strokes Check tolerance	:	3.0	Ì	Del. quantity cm3/1000 strokes	:	83.5
cm3/1000s. Shutoff solenoid	:	8.0	+	Tolerance cm3/1000 strokes	•	2.5
Volt	:	24	Ŧ	Shutoff solenoid	•	24
Rated speed rpm	:	1430	7	Volt	•	
Aneroid pressure hPa	:	1000	‡	Rated speed rpm Aneroid pressure	:	1100
Del. quantity cm3/1000 strokes	:	30.0	‡	hPa Del. quantity	:	1000
Check tolerance cm3/1000S.	:	15.0	<u>†</u>	cm3/1000 strokes Tolerance	:	85.5
Shutoff solenoid Volt	•	24	1	cm3/1000 strokes Check tolerance	:	2.5
	•	1490	+	cm3/1000s. Shutoff solenoid	:	3.5
Rated speed rpm Aneroid pressure	:		7	Volt	:	24
hPa Del. quantity	:	1000	‡	Rated speed rpm	:	850
cm3/1000 strokes Tolerance	:	1.5	‡	Aneroid pressure hPa	:	1000
cm3/1000 strokes Check tolerance	:	1.5	‡	Del. quantity cm3/1000 strokes	:	83.0
cm3/1000S. Shutoff solenoid	:	1.5	1	Tolerance cm3/1000 strokes	:	0.5
Volt	:	24	+	Check tolerance cm3/1000s.	•	3.0
Rated speed rpm	:	600	Ŧ	Shutoff solenoid	•	
			‡	Volt	:	24

MECHANICAL SHUTOR	F		<u> </u>	
Rated speed rpm	:	1250	‡	
Aneroid pressure hPa	:	1000	‡	START TR
Del. quantity			+	Rated sp
m3/1000 strokes olerance	:	1.5	1	Del. qua cm3/1000
m3/1000 strokes	:	1.5	+	Tolerand
pread m3/1000 strokes	:	5.0	‡	cm3/1000 Shutoff
heck tolerance		1.5	+	Volt
cm3/1000s. Spread	•	1.5	Į	
m3/1000 strokes	:	5.0	+	Rated sp
hutoff solenoid	:	24	1	Del. qua cm3/1000
			+	Tolerand
LECTR. SHUTOFF				cm3/1000 Shutoff
CONTROL LEVER, ID	LE :	STOP	+	Volt
ated speed rpm	:	350	‡	
el. quantity			+	ASSEMBLY
m3/1000 strokes olerance	:	1.5		
m3/1000 strokes	:	1.5	+	LDA/
heck tolerance m3/1000s.	:	1.5	1	HBA stro
oread	-		+	Tolerand
n3/1000 strokes	:	5.0	‡	Dimensio Tolerand
ULL-LOAD STOP CO	NTR	OL LEVER	+	MS1 dime
ated speed rpm	:	350	‡	Tolerand
el. quantity			+	
m3/1000 strokes olerance	:	1.5	1	CONTROL
m3/1000 strokes	:	1.5	+	SET
pread m3/1000 strokes	:	5.0	‡	
heck tolerance	•		+	Control
m3/1000s. pread	:	1.5	‡	position
m3/1000 strokes	:	5.0	+	Control
DLE DELIVERY			‡	position
ated speed rpm	:	390	<u> </u>	
el. quantity	•		+	
m3/1000 strokes olerance	:	1.5	1	End of to
m3/1000 strokes	:	1.5	<del>T</del>	
heck tolerance m3/1000s.		1.5	†	
hutoff solenoid	•		Ţ	
olt	:	24	+	

START TRANSITION	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	: 240
	: 78.0
	: 10.0
	: 24
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	: 130
	: 130.0
	: 20.0
	: 24
LDA/ HBA stroke mm Dimension K mm Tolerance mm Dimension KF mm Tolerance mm MS1 dimension mm Tolerance mm	: 7.0 : 3,7 : +-0,1 : 6,4 : +-0,2 : 1,1 : +0,15/-0,1
CONTROL LEVER POSITION SET	
Control lever position YA mm	: 34,838,8
Control lever position YB mm	: 45,350,5
End of test-specification sheet	